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The Effect of Service Quality and Product Quality on User Satisfaction with the Mekari Qontak Application in the Public Relations Division of the Politeknik Negeri Jakarta

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Abstract: Digital transformation requires higher education institutions to adopt information technology to improve the quality of communication services. The Public Relations Division of the Politeknik Negeri Jakarta has implemented the Mekari Qontak application as a Customer Relationship Management (CRM) platform. However, issues with application stability and consistency of technical support have been identified, which could potentially affect user satisfaction. This study aims to examine the partial and simultaneous effects of product quality and service quality on user satisfaction with Mekari Qontak application in this environment. The research methodology uses a quantitative approach with a causal associative study design. Data were collected through a Likert scale questionnaire from 86 respondents selected using simple random sampling. The analysis techniques used include descriptive analysis and multiple linear regression verification. The research findings show that product and service quality have a positive effect on user satisfaction in the strong category. Service quality contributes significantly through the aspects of reliability and responsiveness, while product quality excels in performance and feature completeness. Both variables are proven to strongly influence user satisfaction. This study provides strategic recommendations for managers to improve system stability and serves as an academic reference related to CRM management in educational institutions.

Keyword: Service Quality, Product Quality, User Satisfaction, Customer Relationship Management, Information Systems

INTRODUCTION

Digital transformation has become a fundamental necessity for various organizations, including higher education institutions such as the Politeknik Negeri Jakarta (PNJ). As the complexity of technology-based work environments increases, the use of digital systems plays an important role in improving operational efficiency and the quality of institutional services. The Public Relations Division (Humas) of PNJ, as the unit responsible for communication, institutional image, and information management, is highly dependent on reliable information technology support.

To support these activities, PNJ Public Relations Division uses the Mekari Qontak application, a Customer Relationship Management (CRM) platform that provides integrated communication services. This application is expected to improve work effectiveness and internal user satisfaction through more efficient interaction management.

However, the results of Mekari Qontak user satisfaction survey for the March–August 2025 period show fluctuations in satisfaction levels that tend to decline at the end of the period, accompanied by an increase in the number of user complaints. This condition indicates problems with service and product quality. The success of the system during implementation depends on product performance and service quality, especially on fast and reliable technical assistance. Therefore, it is very important to examine how service and product quality affect customer satisfaction with Mekari Qontak application in Public Relations Division of Politeknik Negeri Jakarta.

Given this situation, it is very important for this study to close the research gap by examining the impact of product and service quality on user satisfaction with Mekari Qontak application in Public Relations Division of Politeknik Negeri Jakarta. The purpose of this study is to determine the level of user happiness, evaluate the perceived quality of services and products, and examine the partial and simultaneous effects of both on customer satisfaction. This is expected to serve as a basis for assessment and improvement in institutional information system management.

METHOD

This study uses a quantitative approach with a causal associative study design to analyze the causal relationship between variables. The focus of the study is to examine the effect of product quality and service quality on user satisfaction with Mekari Qontak application. The study was conducted at Public Relations Division of Politeknik Negeri Jakarta from March to August.

Population and Sample the research population included all 600 people who accessed services through Mekari Qontak application. Sampling was conducted using simple random sampling to give equal opportunity to each member of the population. Based on the Slovin formula calculation with a 10% margin of error, a sample size of 86 respondents was obtained, which was considered representative for regression analysis.

The research approach in this study adopts the method referred to by Bayu et al. (2024), with the aim of identifying customer satisfaction levels and supporting managerial decision-making related to service improvement.

Instruments and Data Collection Data were collected through a questionnaire designed based on service quality and product quality variables. Data measurement used a four-point Likert scale, ranging from a score of 1 (Very Unsatisfactory) to a score of 4 (Very Satisfactory). The research instruments were declared valid and reliable through a prerequisite test, with a reliability threshold criterion of 0.6.

Data Analysis Techniques The data analysis techniques used included descriptive analysis to characterize respondent data and verifiable analysis to test hypotheses. The testing of variable effects was conducted through multiple linear regression analysis and correlation coefficient analysis using SPSS software. Hypothesis testing was conducted in two stages, namely the t-test for partial effects and the F-test for simultaneous effects, as well as the calculation of the coefficient of determination to see the strength of the independent variables' effects on the dependent variables.

RESULTS AND DISCUSSION

Data collection was conducted using questionnaires at the Jakarta State Polytechnic. The research was conducted over a period of 6 months from March to August 2025. The tests used included Validity Test, Reliability Test, Descriptive Analysis, Classical Assumption Test

(Normality Test, Heteroscedasticity Test, Multicollinearity Test, Linearity Test), Multiple Regression Analysis, Correlation Coefficient Analysis, Determination Coefficient, and Hypothesis Testing.

Table 1. Validity Test

Variable	Question	Pearson Correlation	Description
Overall Satisfaction	1	0,817	Valid
Attribute Satisfaction	2	0,891	Valid
Expectation–Performance Confirmation	3	0,797	Valid
Experience-Based Satisfaction	4	0,882	Valid
(Repurchase & Loyalty Intentions)	5	0,883	Valid
Tangibles	6	0,831	Valid
Reliability	7	0,820	Valid
Responsiveness	8	0,777	Valid
Assurance	9	0,682	Valid
Empathy	10	0,856	Valid
Performance (Kinerja)	11	0,815	Valid
Features (Fitur)	12	0,828	Valid
Reliability	13	0,777	Valid
Conformance	14	0,879	Valid
Durability	15	0,894	Valid
Serviceability	16	0,858	Valid
Aesthetics	17	0,831	Valid
Perceived Quality	18	0,883	Valid

Source: Research Data

The validity test results show that the Pearson correlation coefficient for each question is greater than 0.213 with a total of N=86, meaning that all questions in the survey are considered valid.

Reliability

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	86	100.0
	Excluded[a]	0	.0
	Total	86	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.974	18

Source: Research Result

Figure 1. Reliability Test for All Variables

Based on the reliability test results using Cronbach's Alpha, the Reliability Test for all variables obtained a value of 0.974 with a total of 18 items. The Cronbach's alpha value is more than 0.6, so it can be concluded that it is reliable and suitable for use.

Reliability Statistics

Cronbach's Alpha	N of Items
.945	5

Source: Research Result

Figure 2. Reliability Test of Questions in the User Satisfaction Variable Questionnaire

Based on the reliability test results using Cronbach's Alpha, the reliability test for satisfaction obtained a value of 0.945 with a total of 5 items. The Cronbach's alpha value is more than 0.6, so it can be concluded that it is reliable and suitable for use.

Reliability Statistics

Cronbach's Alpha	N of Items
.904	5

Source: Research Result

Figure 3. Reliability Test of Questions in the Service Quality Variable Questionnaire

Based on the reliability test results using Cronbach's Alpha, the Reliability Test for service quality obtained a score of 0.904 with a total of 5 items. The Cronbach's alpha value is greater than 0.6, so it can be concluded that it is reliable and suitable for use.

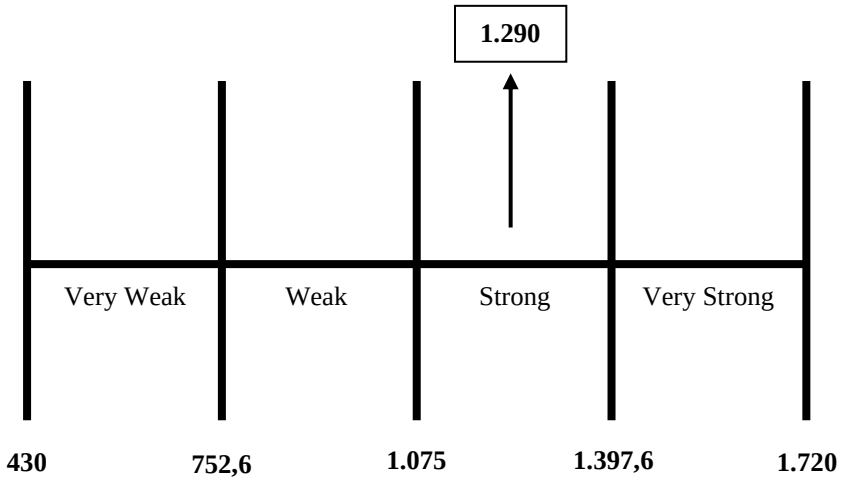
Reliability Statistics

Cronbach's Alpha	N of Items
.955	8

Source: Research Result

Figure 4. Reliability Test of Questions in the Product Quality Variable Questionnaire

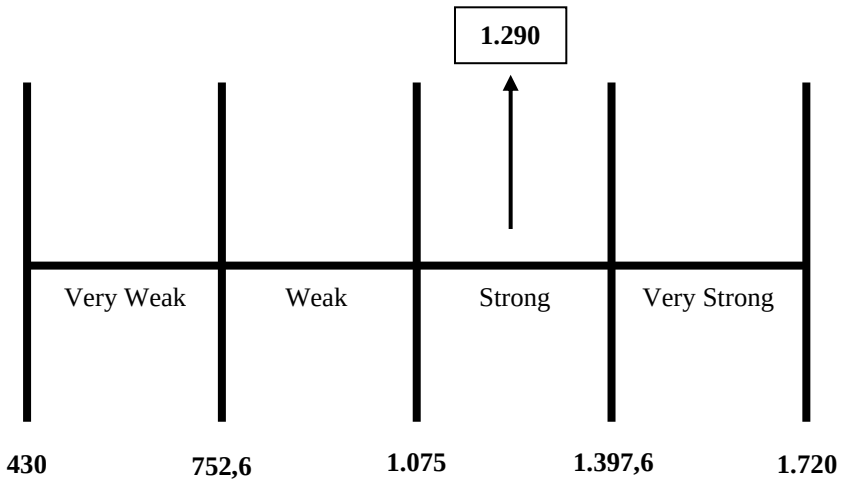
Based on the reliability test results using Cronbach's Alpha, the reliability test for satisfaction obtained a value of 0.955 with a total of 8 items. The Cronbach's alpha value is more than 0.6, so it can be concluded that it is reliable and suitable for use. The test results show that all items of the research variables meet the reliability criteria, in line with the research by Rindu et al. (2021).



Source: Research Result

Figure 5. Descriptive Analysis of User Satisfaction

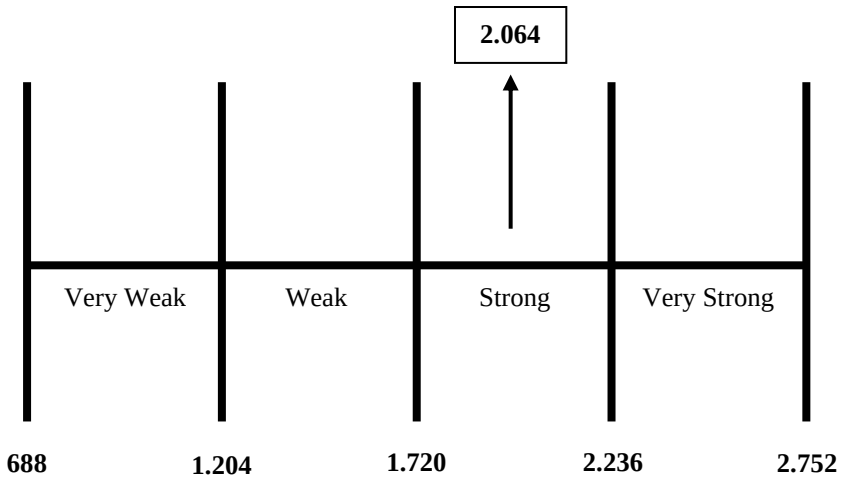
Based on descriptive analysis, the score from the User Satisfaction questionnaire was 1,290, which falls within the interval of 1,075-1,397.6, categorized as Satisfactory. Therefore, it can be concluded that the results of the user satisfaction questionnaire distribution are satisfactory.



Source: Research Result

Figure 6. Descriptive Analysis of Service Quality

Based on the image above, Service Quality is 1,290, which falls within the interval of 1,075-1,397.6, categorized as Satisfactory. Therefore, it can be concluded that the results of the service quality questionnaire distribution are Satisfactory.



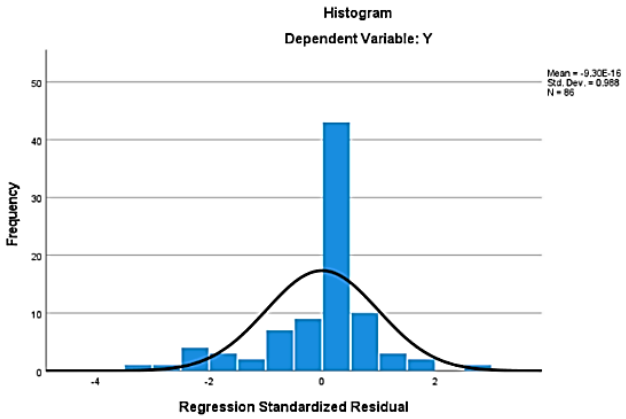
Source: Research Result

Figure 7. Descriptive Analysis of Product Quality

Based on the figure above, it shows that the Product Quality questionnaire score is 2.064, which is in the 1.720-2.236 interval with a Satisfactory category.

This is in line with the results of the study by Nurdianingrum & Sarah (2025). In addition, the overall level of customer satisfaction is satisfactory. As a result, respondents have expressed positive opinions on each variable. Thus, it can be said that the distribution of the product quality questionnaire produced good findings.

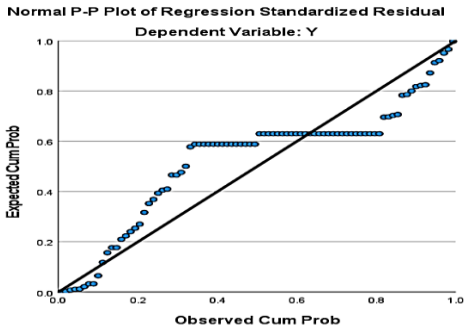
Classical Assumption Test



Source: Research Data

Figure 8. Normality Test

The research data has a distribution pattern that forms a normal curve based on the findings of classical assumption tests, which indicate that the assumption of normality has been met because it forms a regular curve.

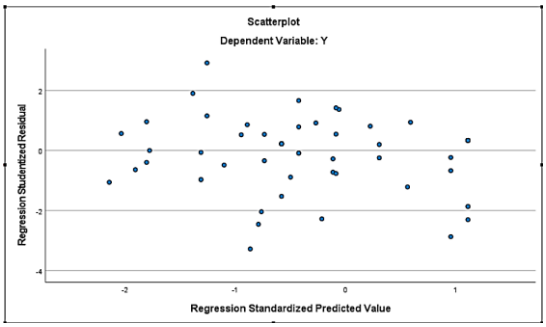


Source: Research Data

Figure 9. Normal P Curve

The data is considered to be normally distributed because the normality test results show that the data points are scattered around the diagonal line. It is normally distributed if the points are still scattered normally, which is in line with the research (Fitri et al., 2019).

Heteroscedasticity Test



Source: Research Data

Figure 10. Scatterplot Heteroscedasticity

From the scatterplot above, it can be concluded that the assumption of homoscedasticity is satisfied. Point Distribution: The data points (residuals) on the graph are scattered randomly around the zero line (Y axis = 0) and do not form a clear or systematic pattern (such as a cone/funnel pattern or a wave pattern).

Multicollinearity Test

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	T	Sig.	Tolerance	VIF
1	(Constant)	2.822	.866		3.257	.002		
	Quality of Service	.360	.119	.387	3.017	.003	.171	5.843
	Quality of Product	.306	.077	.508	3.954	.001	.171	5.843

a. Dependent Variable: User Satisfaction

Source: Research Data

Figure 11. Multicollinearity Data

If VIF > 10, HO is rejected because VIF = 5.843 <10, then accepted HO multicollinearity does not occur. This regression model is free from multicollinearity issues. This means that the

independent variables (service quality and product quality) can be used simultaneously in the model to predict user satisfaction without making the coefficient estimates unstable or biased.

Linearity Test

ANOVA Table

			Sum of Squares	df	Mean Square	F	Sig.
Y * X1	Between Groups	(Combined)	26.961	11	2.451	23.146	<,001
		Linearity	26.146	1	26.146	246.909	<,001
		Deviation from Linearity	.815	10	.082	.770	.657
	Within Groups		7.836	74	.106		
	Total		34.797	85			

Source: Research Data

Figure 12. Linearity Relationship

A substantial linear relationship between the independent and dependent variables is indicated by the Linearity Sig. value, which is obtained as <0.001 (<0.05) based on the linearity test results. In addition, there is no variation from this linear relationship, as indicated by the Sig. variation from Linearity value of 0.657 (>0.05).

Thus, it can be concluded that the assumption of linearity in the regression model has been met. A Sig Deviation off linearity value > 0.05 means that the linearity test has been met. A Sig. value for linearity < 0.05 means that the linearity test has not been met. Therefore, since the sig. for linearity is 0.01, which is less than 0.05, it is met, because 0.657 > 0.05, so the linearity assumption is met.

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	584.329	2	292.164	135.705	.001[b]
	Residual	178.694	83	2.153		
	Total	763.023	85			

a. Dependent Variable: User Satisfaction

b. Predictors: (Constant), Quality of Service, Quality of Product

Source: Research Data

Figure 13. Anova of User Satisfaction

The calculated F value is 135.705 with a significance level of <0.001 based on the F test findings in the ANOVA table. Although H_1 can be accepted, H_0 is rejected because the significance value is less than 0.05. Therefore, it can be said that the regression model can be used and customer satisfaction is significantly influenced by service and product quality factors.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	T	Sig.
1	(Constant)	2.822	.866		3.257	.002
	Quality of Service	.360	.119	.387	3.017	.003
	Quality of Product	.306	.077	.508	3.954	.001

a. Dependent Variable: User Satisfaction

Source: Research Data

Figure 14. User Satisfaction Linear Data

Service quality has a very significant and positive influence on user satisfaction. Improvements in service and product quality will be followed by increased user satisfaction. The Service Quality and Product Quality coefficients indicate the positive nature of this influence.

Multiple Linear Regression Model

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	584.329	2	292.164	135.705	.001[b]
	Residual	178.694	83	2.153		
	Total	763.023	85			

a. Dependent Variable: User Satisfaction

b. Predictors: (Constant), Quality of Service, Quality of Product

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	T	Sig.
1	(Constant)	2.822	.866		3.257	.002
	Quality of Service	.360	.119	.387	3.017	.003
	Quality of Product	.306	.077	.508	3.954	.001

a. Dependent Variable: User Satisfaction

Source: Research Data

Figure 15. Multiple Linear Regression Model

Based on the graph, the model formed is:

$$Y = \beta_{0+} \beta_1 x_1 + \beta_2 x_2$$
$$Y = 2.822 + 0{,}360X_1 + 0{,}306X_2$$

The ANOVA test results show that the regression model is significant with an F value of 135.705 and $p < 0.001$, so that Service Quality and Product Quality simultaneously affect Satisfaction. Partially, Service Quality has a positive and significant effect on Satisfaction ($\beta = 0.360$; $p = 0.003$), while Product Quality shows a more dominant effect ($\beta = 0.306$; $p < 0.001$). This explains that both independent variables play an important role in increasing satisfaction.

Correlations

		User Satisfaction	Quality of Service	Quality of Product
User Satisfaction	Pearson Correlation	1	.850**	.860**
	Sig. (2-tailed)		.001	.001
	N	86	86	86
Quality of Service	Pearson Correlation	.850**	1	.910**
	Sig. (2-tailed)	.001		.001
	N	86	86	86
Quality of Product	Pearson Correlation	.860**	.910**	1
	Sig. (2-tailed)	.001	.001	
	N	86	86	86

**. Correlation is significant at the 0.01 level (2-tailed).

Source: Research Data

Figure 16. Pearson Correlation Data

The results of the Pearson correlation test show that all research variables have a positive and significant relationship. The correlation between Satisfaction and Service Quality is 0.850 ($p < 0.001$), while that between Satisfaction and Product Quality is 0.860 ($p < 0.001$), indicating a very strong relationship. In addition, Service Quality and Product Quality have the highest correlation, which is 0.910 ($p < 0.001$). These results indicate that improving product and service quality is very important to increase respondent satisfaction.

In line with previous research, the results of this study support the findings of Triady et al. (2023), that customer satisfaction is greatly influenced by product and service quality.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.717[a]	.514	.503	.527

a. Predictors: (Constant), Quality of Service, Quality of Product

Source: Research Data

Figure 16. Coefficient of Determination Test

Based on the results of the coefficient of determination test, an R Square value of 0.514 was obtained. This shows that Product Quality and Service Quality simultaneously influence 51.4% of the dependent variable, while 48.6% is influenced by other variables outside the research model. The Adjusted R Square value of 0.503 indicates that the regression model is quite good at explaining the dependent variable.

The coefficient of determination (R Square) value of 0.514 indicates that 51.4% of the variation in User Satisfaction can be explained by Service Quality and Product Quality, while the remaining 48.6% is explained by other variables outside the research model.

Hypothesis Testing

When analyzing the impact of some or all independent factors on the dependent variable, the t-test is used. The statistical test used is the t-test, to determine significance between a probability result of 0.05 and a probability result of Sig, depending on the following decision:

HO: ß = 0 or T count < T table (X regression coefficient is not significant)
Ha: ß ≠ 0 or T count > T table (X regression coefficient is significant)
Significance level: α = 0.05
Critical region: sig = α: Ho is rejected

Find the T table value using the formula:

Df = (α/2 ; n-k-1)

With the following information:
α = 0.05 (5%)
n = Number of respondents
k = Number of independent (free) variables 2
So, df = 0.05/2 ; 86-2-1 = 0.025 ; 83

Using interpolation or statistical software, the most accurate t-table value for df=83 at alpha=0.025 (two-tailed test) is:

t table = 1.989

At a significance level of α = 0.05 (two-tailed test) or α/2 = 0.025, the t-table value obtained is 1.989.

T-test for Coefficient β_1 (Service Quality)
Hypothesis:
- $H_0 : \beta_1 = 0$ (Service Quality has no significant effect on User Satisfaction)
- $H_a : \beta_1 \neq 0$ (Service Quality has a significant effect on User Satisfaction)

Test Results:
- Sig. Value = 0.001 < 0.05
- Calculated t Value > Table t (1.989)

Decision:
Because the Sig. value is < 0.05 and the calculated t is > the table t, H_0 is rejected and H_a is accepted.

Conclusion:
Service Quality partially has a positive and significant effect on User Satisfaction. Thus, the β_1 coefficient should be included in the regression model.

T-test for Coefficieant β_2 (Product Quality)
Hypothesis:
- $H_0 : \beta_1 = 0$ (Product Quality has no significant effect on User Satisfaction)
- $H_a : \beta_1 \neq 0$ (Product Quality has a significant effect on User Satisfaction)

Test Results:
- Sig. Value = 0.001 < 0.05
- Calculated t Value > Table t (1.989)

Decision:
Because the Sig. value < 0.05 and the calculated t > table t, H_0 is rejected and H_a is accepted.

Conclusion:

With a t table value = 1.989, we will compare it with the t count value from the regression results (for example, the t count from the Service Quality variable is 3.017):
- Because t count (3.017) > t table (1.989), H0 is rejected.
- This means that Service Quality has a significant effect on User Satisfaction.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	T	Sig.
1	(Constant)	2.822	.866		3.257	.002
	Quality of Service	.360	.119	.387	3.017	.003
	Quality of Product	.306	.077	.508	3.954	<.001

a. Dependent Variable: User Satisfaction

Source: Research Data

Figure 17. Respondent Satisfaction

With a calculated t-value of 3.017 and a significance level of 0.003, the t-test findings indicate that Service Quality has a substantial impact on Satisfaction. This figure shows that an increase in respondent satisfaction largely depends on service quality.

In addition, with a calculated t-value of 3.954 and a significance level of p <0.001, Product Quality also has a significant impact on Satisfaction. The higher calculated t-value indicates that differences in satisfaction are more strongly explained by product quality than service quality.

These findings show that satisfaction is significantly influenced by both independent factors to a certain extent.

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	584.329	2	292.164	135.705	.001[b]
	Residual	178.694	83	2.153		
	Total	763.023	85			

a. Dependent Variable: User Satisfaction
b. Predictors: (Constant), Quality Service, Quality Product

Source: Research Data

Figure 18. F Test

The F test results show that the regression model has an F value of 135.705 with a significance level of p < 0.001. These findings indicate that Service Quality and Product Quality simultaneously have a significant effect on User Satisfaction. Thus, the regression model used is considered valid because it is able to explain the variation in respondent satisfaction significantly.

CONCLUSION

Based on the research findings and accompanying discussions, the research instruments have been proven to be valid and reliable; users in the Public Relations Division of the Politeknik Negeri Jakarta rated the quality of the Mekari Qontak Application's services and products as good; both simultaneously and partially, they had a positive and significant effect on user satisfaction; and the regression model used could explain 51.4% of the variation in user satisfaction, with the remainder being influenced by factors not included in this study. Therefore, it can be said that improving service quality and product quality are key components in increasing user satisfaction with Mekari Qontak application in Public Relations Division of Politeknik Negeri Jakarta.

Based on the research results, it is recommended that the management of Public Relations Division of Politeknik Negeri Jakarta continue to improve service quality through responsive technical support, clear service flows, and increased user competence so that the use of Mekari Qontak application can be optimized. The application provider is expected to improve product quality by paying attention to system stability, ease of use, and the development of features that are in line with the needs of educational institutions.

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