

The Role of Customer Satisfaction in Mediating the Relationship Between Product Quality and Service Quality on Customer Loyalty at Fore Coffee in Batam

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Abstract: This study examines the effect of product quality and service quality on customer loyalty and the mediating role of customer satisfaction among Fore Coffee customers in Batam City. Using a quantitative approach, data were collected through a Likert-scale questionnaire from 119 respondents selected by purposive sampling. The data were analyzed using validity and reliability tests, classical assumption tests, multiple linear regression, coefficient of determination, t-test, F-test, and Sobel test. The results show that product quality, service quality, and customer satisfaction have a positive and significant effect on customer loyalty. Product quality and service quality also have a positive and significant effect on customer satisfaction. In addition, customer satisfaction significantly mediates the relationship between product quality and customer loyalty, as well as between service quality and customer loyalty. These findings indicate that customer loyalty can be strengthened by improving product and service quality, which in turn enhances customer satisfaction.

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Introduction

The coffee industry in Indonesia continues to grow in line with increasing coffee consumption and changing lifestyles. Coffee has become a social activity, fueling the growth of modern coffee shops, including Fore Coffee, a tech-enabled coffee chain that prioritizes product quality and digital services. In this increasingly competitive environment, Fore Coffee must maintain product and service quality to foster customer satisfaction and loyalty.

Product quality and service are crucial factors in shaping the customer experience. Consistent product quality, menu variety, and fast, friendly, and accurate service supported by a digital system are expected to increase customer satisfaction (Femiyati Saputri & Suhardi, 2023; Stefanny & Suhardi, 2023). This satisfaction, in turn, drives repeat purchases, recommendations, and loyalty to Fore Coffee.

Previous research on the effect of product quality on customer loyalty has yielded mixed results. According to Irsanni & Suhardi (2023), Rahmawati & Suhardi, (2025) Cahyaningrum et al. (2024), and Pahlawan et al. (2019) found that product quality has a positive and significant effect on customer loyalty. Conversely, Ardiansyah et al. (2019) stated that product quality has a negative and significant effect on customer loyalty. These differing results indicate that the relationship between the two is influenced by market characteristics and consumer behavior.

Besides product quality, service quality also plays a role in shaping customer satisfaction. According to Nugroho & Anton Eko Yulianto (2024), service quality is determined by accuracy, speed, friendliness, and reliability. Customer satisfaction is the result of comparing expectations and perceived performance (Arif Prabowo & Dien Mardhiyah, 2023), and is influenced by product and service quality (Panday & Nursal, 2021). Good service will create a positive experience for customers (Zygiaris et al., 2022). However, there are still customer reviews of Fore Coffee that indicate dissatisfaction with the product and service, potentially affecting customer loyalty.

This study aims to analyze the influence of product quality and service quality on customer satisfaction and loyalty, and examine the role of customer satisfaction as a mediating variable for Fore Coffee customers. This research is important as a basis for evaluating strategies to improve product and service quality amidst the competitive coffee industry. The novelty of this study lies in testing the relationship between product quality, service quality, customer satisfaction, and customer loyalty simultaneously by placing customer satisfaction as a mediating variable in the context of Fore Coffee.

Research methods

This study uses a quantitative approach based on the philosophy of positivism to examine the relationships between variables through statistical analysis. This approach was chosen because it can produce objective, standardized, and systematic measurements in examining the influence of product quality, service quality, and customer satisfaction on Fore Coffee customer loyalty. According to (Husda et al., 2023), quantitative research is used to examine specific populations or samples using quantitative data collection techniques to produce scientifically justifiable conclusions.

The population in this study was all Fore Coffee consumers domiciled in Batam City, with an unknown population size. The sample size was determined using the Lemeshow formula, resulting in 119 respondents (Jannah & Hayuningtias, 2024). The sampling technique used purposive sampling, with the criteria being respondents domiciled in Batam City, at least 15 years old, and having purchased or consumed Fore Coffee at least once, thus enabling them to provide an assessment based on their experience.

Data collection was conducted through an online questionnaire distributed using Google Forms. The research instrument was constructed using a five-level Likert scale, ranging from strongly disagree to strongly agree, to measure respondents' perceptions of product quality, service quality, customer satisfaction, and customer loyalty (Jannah & Hayuningtias, 2024). In addition to primary data obtained from respondents, this study also utilized secondary data from books, scientific journals, academic articles, and other relevant literature sources to support the theoretical study.

Data analysis began with classical assumption tests, including normality, multicollinearity, heteroscedasticity, and autocorrelation tests to ensure the regression model met statistical assumptions (Ghozali, 2018; Heykal et al., 2022; Arna et al., 2019; Susanti, 2022). Furthermore, the data were analyzed using multiple linear regression to determine the effect of product quality, service quality, and customer satisfaction on customer loyalty (Arif, 2021; Cahyuni Novia et al., 2023). Model strength was evaluated using the coefficient of determination (R^2) (Car et al., 2020; Cahyuni Novia et al., 2023), while hypothesis testing was conducted through partial tests (t-test) and simultaneous tests (F-test) to determine the significance of each variable's influence and their collective influence on customer loyalty (Febriani & Wayan Cipta, 2023).

The research procedure was carried out in stages, including problem identification, literature

review, development of a research methodology, data collection through questionnaire distribution to respondents, data processing and analysis, preparation of a research report, and concluding. All stages of the research were carried out in Batam City according to a predetermined research schedule to ensure a systematic and focused research process.

Results and Discussion

1. Respondent Characteristics

Table 1: Respondent Characteristics Based on Gender

		Gender			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Man	54	45.4	45.4	45.4
	Woman	65	54.6	54.6	100.0
	Total	119	100.0	100.0	

Based on gender, 65 respondents (54.6%) were female, while 54 respondents (45.4%) were male. These results indicate that Fore Coffee customers in Batam City are predominantly female, although the proportion of male respondents is also relatively balanced.

Table 2: Respondent Characteristics Based on Age

		Age			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	<17 Years	8	6.7	6.7	6.7
	>34 Years	2	1.7	1.7	8.4
	17-25 Years	88	73.9	73.9	82.4
	26-34 Years	21	17.6	17.6	100.0
	Total	119	100.0	100.0	

Based on age, the majority of respondents were in the 17–25 years range (88 people) (73.9%), followed by 21 people aged 26–34 years (17.6%), 8 people aged under 17 years (6.7%), and 2 people aged over 34 years (1.7%). These results indicate that Fore Coffee customers in Batam City are dominated by the young adult age group.

Table 3: Respondent Characteristics Based on Last Education

		Last education			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Diploma (D3)	4	3.4	3.4	3.4
	Bachelor's degree)	74	62.2	62.2	65.5
	High School/Vocational School	41	34.5	34.5	100.0
	Total	119	100.0	100.0	

Based on their highest level of education, the majority of respondents (74 respondents, 62.2%) had a bachelor's degree (S1), followed by 41 (34.5%) high school/vocational high school graduates and 4 (3.4%) high school graduates. These results indicate that most Fore Coffee customers have a relatively high level of education.

Table 4: Respondent Characteristics Based on Occupation

Work

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Housewife	1	.8	.8	.8
	Civil Servants/Private Sector	87	73.1	73.1	73.9
	Students	12	10.1	10.1	84.0
	Businessman	19	16.0	16.0	100.0
	Total	119	100.0	100.0	

Based on occupation, the majority of respondents were civil servants or private sector employees (87 people) (73.1%), followed by entrepreneurs (19 people) (16.0%), students (12 people) (10.1%), and housewives (1 person) (0.8%). These results indicate that the majority of Fore Coffee's customers are from the working class.

Table 5: Respondent Characteristics Based on Income

		Income			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	> Rp. 10,000,000	12	10.1	10.1	10.1
	Rp. 4,100,000 - Rp. 6,000,000	34	28.6	28.6	38.7
	Rp. 6,100,000 - Rp. 8,000,000	54	45.4	45.4	84.0
	Rp. 8,100,000 - Rp. 10,000,000	19	16.0	16.0	100.0
	Total	119	100.0	100.0	

Based on income level, the majority of respondents had an income of Rp6,100,000–Rp8,000,000 (54 people) (45.4%), followed by Rp4,100,000–Rp6,000,000 (34 people) (28.6%), Rp8,100,000–Rp10,000,000 (19 people) (16.0%), and above Rp10,000,000 (12 people) (10.1%). These results indicate that most of Fore Coffee's customers are in the middle- to upper-middle-income category.

Table 6: Respondent Characteristics Based on Experience Purchasing Fore Coffee Products

Have you ever purchased Fore Coffee products?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	119	100.0	100.0	100.0

Based on purchasing experience, all 119 respondents (100%) had purchased Fore Coffee products. These results indicate that all respondents met the research criteria and had direct experience assessing product quality, service quality, customer satisfaction, and loyalty.

2. Respondent Results Description

Table 7: Descriptive Statistics Assessment Criteria

Mean Value Interval	Category
1.00 – 1.80	Very Bad
1.81 – 2.60	Not good
2.61 – 3.40	Pretty good
3.41 – 4.20	Good

4.21 – 5.00

Very good

Based on these criteria, the average (mean) value for each indicator in the variables Product Quality, Service Quality, Customer Satisfaction, and Customer Loyalty is then interpreted according to the established categories. The higher the average value obtained, the more positive the respondents' perceptions of the indicators and variables studied.

3. Obtaining Product Quality Variable (X1)

Based on the Product Quality variable (X1), the mean value is between 2.66 and 2.84, categorized as quite good. The highest value is found in the indicator that Fore Coffee products have minimal defects in their production process (2.84), while the lowest value is found in the indicator that Fore Coffee has attractive features in the eyes of consumers (2.66). In general, respondents assessed the quality of Fore Coffee products as quite good, but the company still needs to improve product innovation and attractiveness to increase customer satisfaction.

Based on the Service Quality variable (X2), the mean value was 2.72–2.83, categorized as quite good. The highest value was found in the responsive service indicator and friendly and caring service (2.83), while the lowest value was found in the technology use indicator and service accuracy (2.72). These results indicate that Fore Coffee's service quality is considered quite good, although the technology and service accuracy aspects still need to be improved.

Based on the Customer Satisfaction (Z) variable, the mean value was 2.71–2.77, categorized as quite good. The highest value was found in the indicators of ease of product use and consistent fulfillment of consumer expectations (2.77), while the lowest value was found in the indicators of appropriate information and product convenience and benefits (2.71). Overall, customers were quite satisfied with Fore Coffee's products and services, but information delivery and customer convenience still need to be improved.

Based on the Customer Loyalty variable (Y), the mean value was 2.63–2.83, categorized as quite good. The highest value was found in the indicator that Fore Coffee provides satisfactory service (2.83), while the lowest value was found in the indicator that Fore Coffee's product quality is reliable (2.63). These results indicate that customer loyalty is quite good, but the company still needs to improve the consistency of product quality, service, and customer relationships to encourage repeat purchases.

Data Evaluation

Table 8: Validity Test Results

Variables	Statement	r-count	r-table	Information
<i>Product Quality(X1)</i>	Statement 1	0.921	0.361	Valid
	Statement 2	0.939		
	Statement 3	0.903		
	Statement 4	0.956		
	Statement 5	0.929		
	Statement 6	0.887		
	Statement 7	0.956		
<i>Service Quality(X2)</i>	Statement 1	0.893		
	Statement 2	0.924		
	Statement 3	0.873		
	Statement 4	0.915		
	Statement 5	0.928		
	Statement 6	0.917		
	Statement 7	0.907		
<i>Customer Satisfaction(Z)</i>	Statement 8	0.928		
	Statement 9	0.917		
	Statement 1	0.866		
	Statement 2	0.984		
	Statement 3	0.828		
	Statement 4	0.866		
	Statement 5	0.948		
	Statement 6	0.828		
	Statement 7	0.847		

Customer Loyalty (Y)	Statement 8	0.922
	Statement 1	0.911
	Statement 2	0.815
	Statement 3	0.892
	Statement 4	0.841
	Statement 5	0.774
	Statement 6	0.870
	Statement 7	0.921
	Statement 8	0.824
	Statement 9	0.911
	Statement 10	0.815

Table 9: Reliability Test Results

No	Variables	Cronbach's Alpha Value Measurement	Standard Cronbach's Alpha Value	Information
1	Product Quality(X1)	0.972	0.80	Reliable
2	Service Quality(X2)	0.974	0.80	Reliable
3	Customer Satisfaction(Z)	0.959	0.80	Reliable
4	Customer Loyalty (Y)	0.959	0.80	Reliable

Based on the table above, it can be concluded that the instruments used in this study were proven reliable. Reliability tests showed that the Cronbach's Alpha value was greater than 0.80, indicating that each instrument had good internal consistency and was reliable in this study.

Classical Assumption Test

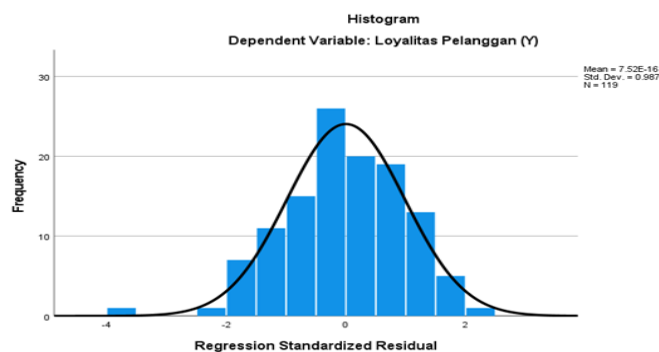


Figure 1: Histogram Diagram

Based on the histogram illustration, it can be seen that the residual data distribution forms a pattern similar to a bell curve and does not show any significant skew to the left or right. This indicates that the residual data is evenly distributed around the mean value.

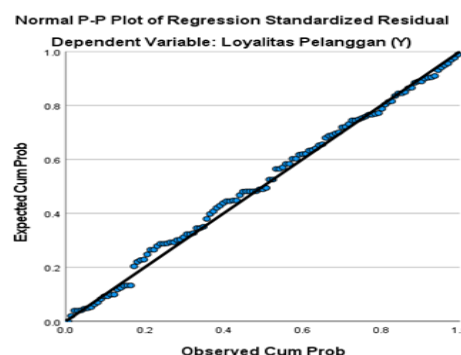


Figure 2: Normal PP Plot of Regression Standardized Residual Diagram

Based on the Normal P-P Plot graph, the residual points are spread around the diagonal line and follow the direction of the line. The Kolmogorov–Smirnov test results also show a significance value greater than 0.05, thus concluding that the data are normally distributed and meet the assumption of normality.

Table 10: Results of the One-Sample Kolmogorov-Smirnov Test

One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual	(CR
N		119	
Normal Parameters ^{a,b}	Mean	.0000000	
	Standard Deviation	2.31624319	
Most Extreme Differences	Absolute	.052	
	Positive	.038	
	Negative	-.052	
Test Statistics		.052	
Asymp. Sig. (2-tailed) ^c		.200 ^d	
Monte Carlo Sig. (2-tailed) ^e	Sig.	.576	
	99% Confidence Interval		
	Lower Bound	.563	
		Upper Bound	.589

Table 11: Multicollinearity Test Results

Coefficients^a

Model		Collinearity Statistics	
		Tolerance	VIF
1	Product Quality (X1)	.213	4,686
	Service Quality (X2)	.172	5,822
	Customer Satisfaction (Z)	.192	5,209

a. Dependent Variable: Customer Loyalty (Y)

Based on the results of the multicollinearity test, the variables Product Quality, Service Quality, and Customer Satisfaction have a Tolerance value greater than 0.10 and a VIF value less than 10. Thus, it can be concluded that there is no multicollinearity between the independent variables, so that the regression model meets the multicollinearity assumptions and is suitable for use for further analysis.

Table 12: Heteroscedasticity Test Results

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1,836	.404		4,541	.000
	Product Quality (X1)	-.018	.040	-.087	-.435	.664
	Service Quality (X2)	.034	.035	.216	.964	.337
	Customer Satisfaction (Z)	-.024	.038	-.133	-.627	.532

a. Dependent Variable: ABS_RES

Based on the results of the Glejser heteroscedasticity test, all independent variables have a significance value greater than 0.05, namely Product Quality (0.664), Service Quality (0.337), and

Customer Satisfaction (0.532). Thus, it can be concluded that there is no heteroscedasticity, so the regression model meets the heteroscedasticity assumption and is suitable for further analysis.

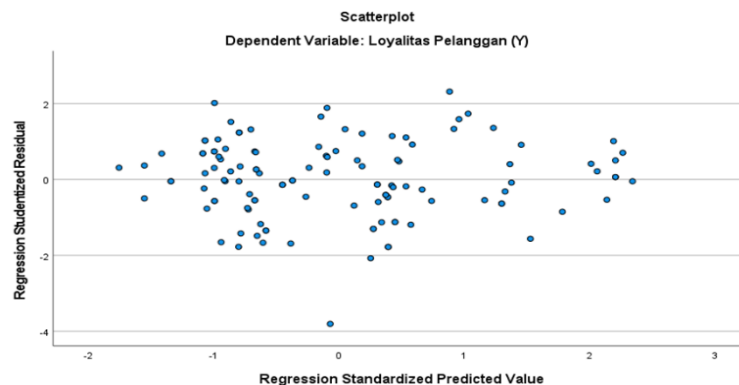


Figure 3: Scatterplot Diagram

Based on the scatterplot graph, the residual points are randomly distributed above and below zero without forming any pattern. This indicates that there is no heteroscedasticity, thus meeting the homoscedasticity assumption in the regression model.

4. Multiple Linear Regression Analysis

Table 13: Results of Multiple Linear Regression Analysis Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.931	.658		1,416	.159
	Product Quality (X1)	.359	.066	.269	5,468	.000
	Service Quality (X2)	.233	.057	.223	4,067	.000
	Customer Satisfaction (Z)	.629	.062	.521	10,067	.000

a. Dependent Variable: Customer Loyalty (Y)

Based on the results of multiple linear regression analysis, the equation $Y = 0.931 + 0.359X_1 + 0.233X_2 + 0.629Z + e$ is obtained. The constant value of 0.931 indicates customer loyalty when all independent variables are considered constant. Furthermore, Product Quality ($\beta = 0.359$; Sig. = 0.000), Service Quality ($\beta = 0.233$; Sig. = 0.000), and Customer Satisfaction ($\beta = 0.629$; Sig. = 0.000) have positive and significant coefficients. These results indicate that increasing product quality, service quality, and customer satisfaction will increase Fore Coffee customer loyalty, with Customer Satisfaction having the greatest influence.

5. Hypothesis Testing

Table 14: Hypothesis Results (F Test)

ANOVA						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	10056.512	3	3352.171	608,939	.000b
	Residual	633,068	115	5,505		
	Total	10689.580	118			

a. Dependent Variable: Customer Loyalty (Y)

b. Predictors: (Constant), Customer Satisfaction (Z), Product Quality (X1), Service Quality (X2)

Based on the F-test results, the calculated F-value was 608.939 with a significance value of 0.000 (<0.05). These results indicate that Product Quality, Service Quality, and Customer Satisfaction simultaneously have a significant effect on Customer Loyalty. Thus, the regression model is declared suitable for use, and the simultaneous hypothesis is accepted.

Table 15: Hypothesis Results (F Test)

ANOVA						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5941.861	2	2970.931	244,119	.000b
	Residual	1411,719	116	12,170		
	Total	7353.580	118			

a. Dependent Variable: Customer Satisfaction (Z)

b. Predictors: (Constant), Service Quality (X2), Product Quality (X1)

Based on the F-test results in the ANOVA table, the calculated F-value was 244.119 with a significance value of 0.000 (<0.05). These results indicate that Product Quality and Service Quality simultaneously have a significant effect on Customer Satisfaction. Thus, the simultaneous hypothesis is accepted, and the regression model is deemed appropriate to explain the relationship between the three variables.

Table 16: Hypothesis Results (t-Test)

Coefficients ^a					
Model		Unstandardized Coefficients		Standardized Coefficients	Sig.
		B	Std. Error	Beta	
1	(Constant)	.931	.658		.159
	Product Quality (X1)	.359	.066	.269	.000
	Service Quality (X2)	.233	.057	.223	.000
	Customer Satisfaction (Z)	.629	.062	.521	.000

a. Dependent Variable: Customer Loyalty (Y)

Based on the results of the t-test (partial), Product Quality, Service Quality, and Customer Satisfaction each have a significance value of 0.000 (<0.05). These results indicate that all three variables have a positive and significant effect on Customer Loyalty at Fore Coffee in Batam. Among the three, Customer Satisfaction has the greatest influence on customer loyalty, indicated by the highest regression coefficient and standard beta values.

Table 17: Hypothesis Results (t-Test)

Coefficients ^a					
Model		Unstandardized Coefficients		Standardized Coefficients	Sig.
		B	Std. Error	Beta	
1	(Constant)	1,863	.962		.055
	Product Quality (X1)	.384	.091	.347	.000
	Service Quality (X2)	.504	.071	.581	.000

a. Dependent Variable: Customer Satisfaction (Z)

Based on the results of the partial t-test, Product Quality and Service Quality each have a significance value of 0.000 (<0.05). These results indicate that both variables have a positive and significant effect on Customer Satisfaction among Fore Coffee customers in Batam. Furthermore, Service Quality is the variable that has a more dominant influence on Customer Satisfaction, indicated by the larger regression coefficient and standard beta values compared to Product Quality.

Table 18: Results of the Determination Coefficient Test

Model Summary				
Model	R	R Square	Adjusted R Square	Standard Error of the Estimate
1	.970a	.941	.939	2.34626

a. Predictors: (Constant), Customer Satisfaction (Z), Product Quality (X1), Service Quality (X2)

Based on the results of the Model Summary analysis, the R Square (R^2) value was obtained at 0.941, which indicates that Product Quality, Service Quality, and Customer Satisfaction together were able to explain 94.1% of the variation in Customer Loyalty, while 5.9% was influenced by other variables outside the study. The Adjusted R Square value of 0.939 indicates that the regression model has a very strong ability to explain customer loyalty at Fore Coffee in Batam.

Table 19: Results of the Determination Coefficient Test

Model Summary				
Model	R	R Square	Adjusted R Square	Standard Error of the Estimate
1	.899a	.808	.805	3.48855

a. Predictors: (Constant), Service Quality (X2), Product Quality (X1)

Based on the results of the Model Summary analysis, an R Square (R^2) value of 0.808 was obtained, indicating that Product Quality and Service Quality together were able to explain 80.8% of the variation in Customer Satisfaction, while 19.2% was influenced by other variables outside the study. The Adjusted R Square value of 0.805 indicates that the regression model has a very strong ability to explain Customer Satisfaction of Fore Coffee customers in Batam.

6. Indirect Relationship Hypothesis Testing (Sobel Test)

Table 20: Sobel H4 Test Results

Information	Mark
Coefficient a ($X1 \rightarrow Z$)	0.384
Coefficient b ($Z \rightarrow Y$)	0.629
Standard Error a (Sa)	0.091
Standard Error b (Sb)	0.062
Sobel Statistics	3.81
P-Value	0,000

Based on the results of the Sobel test, the Sobel Statistics value was 3.81 (> 1.96), and the p-value was 0.0001 (< 0.05). These results indicate that Customer Satisfaction is able to significantly mediate the effect of Product Quality on Customer Loyalty; thus, the hypothesis is accepted.

Table 21: Sobel H5 Test Results

Information	Mark
Coefficient a ($X_2 \rightarrow Z$)	0.504
Coefficient b ($Z \rightarrow Y$)	0.629
Standard Error a (Sa)	0.071
Standard Error b (Sb)	0.062
Sobel Statistics	5.88
P-Value	0.0000

Based on the Sobel test results, the Sobel Statistics value was 5.88 (> 1.96), and the p-value was 0.0000 (< 0.05). These results indicate that Customer Satisfaction can significantly mediate the effect of Service Quality on Customer Loyalty; thus, the hypothesis is accepted.

7. Discussion

The Influence of Product Quality on Customer Loyalty at Fore Coffee in Batam

The results of the study indicate that product quality has a positive and significant effect on customer loyalty at Fore Coffee in Batam, as evidenced by a significance value of $0.000 < 0.05$. This finding suggests that the better the product quality perceived by customers, the higher the loyalty they form. Consistent product quality that meets customer expectations encourages repeat purchases and recommendations to others.

The results of this study align with those of Naini et al. (2022), Taufik et al. (2022), and Rita Mardiana (2022), which found that product quality has a positive and significant effect on customer loyalty. Thus, product quality is a crucial factor in building customer loyalty at Fore Coffee.

The Influence of Service Quality on Customer Loyalty at Fore Coffee in Batam

The results of the study indicate that service quality has a positive and significant effect on customer loyalty at Fore Coffee in Batam, with a significance value of $0.000 < 0.05$. These results indicate that fast, friendly, responsive, and accurate service can increase customer loyalty and encourage repeat purchases.

This finding aligns with research by Hanny and Krisyana (2022) and Rita Mardiana (2022), which found that service quality has a positive and significant effect on customer loyalty. However, this study differs from Naini et al. (2022) and Taufik et al. (2022), who found that service quality had no direct effect on customer loyalty. This difference is likely influenced by the characteristics of the research subjects, where Fore Coffee customers place greater importance on service quality in their consumption experience.

The Influence of Customer Satisfaction on Customer Loyalty at Fore Coffee in Batam

The results of the study indicate that customer satisfaction has a positive and significant effect on customer loyalty at Fore Coffee in Batam, with a significance value of $0.000 < 0.05$. Furthermore, customer satisfaction is the most dominant variable influencing customer loyalty. This finding indicates that the higher the customer satisfaction, the higher the customer loyalty to Fore Coffee.

The results of this study align with those of Naini et al. (2022), Ghazali and Sholahuddin (2024), Wijaya and Bernardo (2022), and Hanny and Krisyana (2022), who stated that customer satisfaction has a positive and significant effect on customer loyalty.

The Influence of Product Quality on Customer Satisfaction at Fore Coffee in Batam

The results of the study indicate that Service Quality has a positive and significant effect on Customer Satisfaction with a significance value of $0.000 < 0.05$. Furthermore, Service Quality has a more dominant influence than Product Quality in increasing Fore Coffee customer satisfaction.

The results of this study align with those of Ardhana et al. (2024), Ghazali and Sholahuddin (2024), Wijaya and Bernardo (2022), Hanny and Krisyana (2022), and Dava Tri Agutama Bachtiar et al. (2024), which show that service quality has a positive and significant effect on customer satisfaction.

The Influence of Service Quality on Customer Satisfaction at Fore Coffee in Batam

The results of the Sobel test show that Customer Satisfaction is able to significantly mediate the influence of Product Quality and Service Quality on Customer Loyalty, as indicated by the Sobel Statistics values of 3.81 and 5.88, respectively, and a p-value <0.05. These results indicate that product quality and service quality increase customer loyalty through increased customer satisfaction.

This finding is in line with research by Ghazali and Sholahuddin (2024) and Wijaya and Bernardo (2022), which states that customer satisfaction mediates the relationship between product quality and service quality and customer loyalty.

Conclusion

This study concludes that Product Quality and Service Quality have a positive and significant effect on Customer Satisfaction and Customer Loyalty at Fore Coffee in Batam. Customer Satisfaction is also proven to have a positive and significant effect on Customer Loyalty and is the most dominant variable. The results of the Sobel test indicate that Customer Satisfaction is able to significantly mediate the effect of Product Quality and Service Quality on Customer Loyalty. This finding confirms that improving product and service quality, followed by the creation of customer satisfaction, will strengthen customer loyalty. Practically, the results of this study imply that Fore Coffee needs to maintain product quality consistency, improve service speed and friendliness, optimize digital services, and strengthen the customer experience to maintain consumer loyalty.

This study has limitations because it only involved 119 respondents in Batam City, so the results cannot be generalized to all Fore Coffee customers in other regions. Furthermore, the study only examined Product Quality, Service Quality, Customer Satisfaction, and Customer Loyalty, so there are still other factors that could potentially influence customer loyalty. Future research is recommended to expand the coverage area and number of respondents and add variables such as price, brand image, promotion, perceived value, customer experience, or digital service quality to gain a more comprehensive understanding of the factors influencing customer loyalty in the modern coffee shop industry.

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