

The Effect of Service Quality on Consumer Loyalty with Consumer Satisfaction as an Intervening Variable at Sibmont Tire Repair Shop in Aceh Besar

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ABSTRACT

This study aims to analyze the effect of service quality on consumer loyalty at SibMont Ban Workshop in Aceh Besar, with consumer satisfaction as an intervening variable. This study employed a quantitative approach with an associative research design. Data were collected through questionnaires using a Likert scale. The data analysis techniques included validity testing, reliability testing, classical assumption tests, linear regression analysis, t-test, coefficient of determination (R^2), path analysis, and Sobel test using SPSS version 27. The results showed that service quality has a positive and significant effect on consumer loyalty. Service quality also has a positive and significant effect on consumer satisfaction. Furthermore, consumer satisfaction has a positive and significant effect on consumer loyalty. The mediation test results indicated that consumer satisfaction mediates the effect of service quality on consumer loyalty. Thus, consumer satisfaction acts as an intervening variable in the relationship between service quality and consumer loyalty, with partial mediation. These findings indicate that improving the service quality provided by SibMont Ban Workshop in Aceh Besar can increase consumer satisfaction and ultimately strengthen consumer loyalty.

Keywords: Service Quality, Consumer Satisfaction, Consumer Loyalty.

1. Introduction

In the era of globalization and increasingly intense business competition, every company is required to create a competitive advantage in order to survive and grow. Not only large companies, but also small and medium-sized enterprises are required to improve their competitiveness in attracting and retaining consumers. One of the main factors that has received considerable attention is service quality. In service companies, service quality is a crucial aspect because it can provide added value, meet consumer expectations, and differentiate a business from similar competitors (Tjiptono, 2023; Lovelock & Wirtz, 2022).

Current developments in consumer behavior indicate that consumers are becoming increasingly critical and selective when choosing service providers. Consumers evaluate not only the final results of the services they receive but also how the service process is delivered, including employee friendliness, service speed, information

accuracy, and the ability to handle complaints. Therefore, companies are required to provide high-quality services in order to create consumer satisfaction (Lovelock & Wirtz, 2022).

Good service quality provides consumers with a positive experience, thereby increasing their satisfaction. Satisfied consumers tend to have a positive perception of the company, make repeat purchases, and recommend the products or services to others. Conversely, services that fail to meet consumer expectations may result in dissatisfaction and encourage consumers to switch to competitors. Thus, consumer satisfaction is an important factor in shaping consumer loyalty (Tjiptono, 2023).

In the context of automotive service businesses, particularly vehicle repair shops, service quality plays a highly important role because consumers interact directly with service providers. In addition to being required to deliver high-quality workmanship, repair shops must also be

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able to provide services that are fast, accurate, friendly, transparent, and trustworthy. Increasing competition among repair shops, coupled with the growing use of social media as a source of information and consumer reviews, requires every repair shop to continuously improve its service quality in order to maintain consumer trust and loyalty.

SibMont Ban Aceh Besar is an automotive service business engaged in tire services and vehicle maintenance, located in Lampreh Lamteungoh, Ingin Jaya District, Aceh Besar Regency. The repair shop provides various consumer needs, including tire repair, tire replacement, wheel alignment, wheel balancing, and other vehicle maintenance services. In carrying out its operational activities, SibMont Ban Aceh Besar is supported by three employees who are responsible for serving all consumer needs.

Based on the results of preliminary observations and brief interviews with several consumers of SibMont Ban Aceh Besar, it was found that, in general, the services provided were fairly good and the quality of the work was considered satisfactory. However, due to the relatively limited number of employees, with only three employees available, queues frequently occur when the number of consumers increases, resulting in longer waiting times for service. In addition, several consumers indicated that information regarding the estimated completion time was not always communicated clearly, requiring them to wait longer than expected. The waiting-room facilities were also considered to require improvement in order to provide greater comfort while consumers waited for their vehicles to be serviced.

These phenomena indicate that the limited number of employees may affect service quality, particularly in terms of service speed, responsiveness, and communication with consumers. Although the quality of the work provided is considered good, lengthy waiting times may affect consumers' overall experience in receiving services. This condition has the potential to reduce consumer satisfaction if it is not balanced with fast, communicative, and professional service.

On the other hand, good service quality does not necessarily create consumer loyalty directly. Loyalty is generally formed after consumers experience satisfaction with the services they receive. In other words, consumer satisfaction serves as an intervening variable that bridges the relationship between service quality and consumer loyalty. Consumers who are satisfied are more likely to reuse the repair shop's services, recommend them to others, and are less likely to switch to competing repair shops.

2. Literature Review

2.1 Service Quality

Service quality is an important concept in service marketing because it reflects the extent to which a company is able to provide services that meet or exceed consumer expectations. Rahman and Yusuf (2025) define service quality as the overall characteristics of a service that are capable of providing value and a positive experience to consumers, thereby influencing consumer sat-

isfaction and loyalty. Similarly, Sari and Nugroho (2024) explain that service quality refers to a company's ability to provide reliable and responsive services that are capable of creating consumer satisfaction.

Kotler, Keller, and Chernev (2021) state that service quality is reflected in a company's ability to provide services that meet or exceed consumer expectations. Meanwhile, Tjiptono (2022) explains that service quality refers to the level of excellence expected by consumers and the extent to which such excellence is controlled to fulfill their needs and expectations. Lovelock and Wirtz (2021) further explain that service quality represents consumers' evaluation of the excellence of a service based on their experiences throughout the service consumption process.

In this study, service quality is measured using five dimensions, namely reliability, responsiveness, assurance, empathy, and tangibles. These dimensions represent the company's ability to provide accurate and reliable services, respond quickly to consumer needs, provide a sense of security and trust, demonstrate personal attention, and provide adequate physical facilities. These dimensions are particularly relevant to automotive repair services because consumers directly interact with employees and experience the service process while their vehicles are being serviced.

2.2 Consumer Satisfaction

Consumer satisfaction represents the consumer's emotional response after comparing expectations with the actual performance of a product or service. Tjiptono (2022) explains that consumer satisfaction is an emotional response that arises after consumers compare their expectations with the performance they experience. Ramadani and Riofita (2024) similarly state that satisfaction is a feeling of pleasure or satisfaction that emerges after consumers compare the performance of a product or service with their expectations.

Consumer satisfaction is important because it can strengthen the relationship between a company and its consumers. Satisfied consumers tend to have more positive perceptions of a company, reuse its products or services, and provide positive recommendations to others. Therefore, consumer satisfaction is not only an evaluation of past service experiences but also an important factor in determining future consumer behavior.

In this study, consumer satisfaction is measured through several indicators, namely expectation conformity, intention to repurchase, willingness to recommend, and satisfaction with product or service performance. These indicators reflect whether the services received are consistent with consumer expectations and whether the resulting experience encourages consumers to continue using and recommending the services.

2.3 Consumer Loyalty

Consumer loyalty is an important outcome in service marketing because loyal consumers are more likely to maintain long-term relationships with a company. Hasanah et al. (2025) explain

that consumer loyalty plays a strategic role in retaining consumers and increasing company profitability because loyal consumers tend to maintain long-term relationships with the company. Adawiyah and Halida (2024) define consumer loyalty as the tendency of consumers to consistently choose and use a particular product or service over a certain period.

Rashid et al. (2020) describe consumer loyalty as consumer behavior characterized by repeat purchasing and recommendations of products or services. Similarly, Rahayu and Harsono (2023) explain that consumer loyalty can be reflected through repeat purchases, willingness to recommend products or services to others, and resistance to switching to competitors.

Based on these perspectives, consumer loyalty can be understood as the willingness of consumers to continue using a company's products or services and to maintain their preference despite the availability of competing alternatives. In this study, consumer loyalty is measured through repurchase intention, recommendation intention, preference for the service, and resistance to competitors.

2.4 Relationships Among Variables

The relationships among variables in this study explain the relationships between service quality, consumer satisfaction, and consumer loyalty at Sibmont Tire Repair Shop in Aceh Besar. Service quality is positioned as the independent variable (X), consumer satisfaction as the intervening variable (Z), and consumer loyalty as the dependent variable (Y). The relationships among these variables are based on theories and previous research findings indicating that service quality can shape consumer satisfaction and subsequently encourage the development of consumer loyalty.

Service Quality and Consumer Loyalty

Service quality is related to consumer loyalty because services that are able to meet consumer needs and expectations can create positive experiences. According to Tjiptono (2022), service quality is related to a company's ability to provide services that meet consumers' expectations and preferences. The better the service quality provided, the greater the likelihood that consumers will maintain their relationship with the company. Consumers who receive good service tend to reuse the service, recommend it to others, and are less likely to switch to competitors. This is consistent with the findings of Rahayu and Harsono (2023), which indicate that consumer loyalty can be reflected through repeat purchases, recommendations, and resistance to competitors' influence. Ramadani and Riofita (2024) also found that service quality has a positive and significant effect on consumer loyalty. Based on this explanation, the higher the service quality provided by Sibmont Tire Repair Shop in Aceh Besar, the higher the consumer loyalty.

Service Quality and Consumer Satisfaction

Service quality has a close relationship with consumer satisfaction. According to Tjiptono (2022), consumer satisfaction is formed through a comparison between consumers' expectations and the service performance they receive. When

the service provided meets or exceeds expectations, consumers will experience satisfaction. Conversely, services that do not meet expectations may result in dissatisfaction. In the context of Sibmont Tire Repair Shop in Aceh Besar, service quality can be assessed through reliability in providing services, responsiveness to consumer needs, assurance of service, attention to consumers, and the condition of supporting facilities. The findings of Taufik et al. (2024) show that service quality has a positive and significant effect on consumer satisfaction. Nawastuty et al. (2022) also found that service quality has a positive and significant effect on consumer satisfaction. Therefore, the better the service quality provided, the higher the level of consumer satisfaction.

Consumer Satisfaction and Consumer Loyalty

Consumer satisfaction is one of the factors that can encourage the development of consumer loyalty. Consumers who are satisfied with the services they receive tend to have a stronger intention to reuse the service, recommend it to others, and maintain their preference for a particular company. Tjiptono (2022) explains that satisfaction is related to consumers' evaluation of their experiences after using a product or service. Satisfaction resulting from a positive experience can strengthen the relationship between consumers and the company. The findings of Taufik et al. (2024) show that consumer satisfaction has a positive and significant effect on consumer loyalty. Similar results were also reported by Urfany and Muthohar (2022), who found that consumer satisfaction has a positive and significant effect on consumer loyalty. Therefore, the higher the consumer satisfaction with the services provided by Sibmont Tire Repair Shop in Aceh Besar, the higher the consumer loyalty.

Service Quality and Consumer Loyalty through Consumer Satisfaction

In this study, consumer satisfaction serves as an intervening variable that explains the mechanism underlying the relationship between service quality and consumer loyalty. Good service quality can create positive experiences, thereby increasing consumer satisfaction. Such satisfaction can subsequently encourage consumers to reuse the service, recommend it to others, and maintain their preference for the company. Thus, service quality can affect consumer loyalty not only directly but also indirectly through consumer satisfaction.

The mediating relationship is supported by the study of Yudhanto Waloejo and Farida (2022), which found that consumer satisfaction was able to partially mediate the effect of service quality on consumer loyalty. However, Taufik et al. (2024) found that consumer satisfaction did not mediate the effect of service quality on consumer loyalty. The differences in these findings indicate an inconsistency in previous research regarding the role of consumer satisfaction as an intervening variable. Therefore, this study reexamines this relationship in the context of Sibmont Tire Repair Shop in Aceh Besar.

Based on the explanation of the relationships among variables, it can be concluded that service quality is expected to affect consumer loyalty

both directly and indirectly through consumer satisfaction. Good service quality is expected to increase consumer satisfaction, while high satisfaction is expected to strengthen consumer loyalty. These relationships provide the basis for formulating the research hypotheses.

2.5 Theoretical Framework and Hypothesis Development

1. Theoretical Framework

Based on the theoretical review presented above and supported by several previous studies, service quality (X) is positioned as the independent variable, consumer loyalty (Y) as the dependent variable, and consumer satisfaction (Z) as the intervening variable at Sibmont Tire Repair Shop in Aceh Besar. Therefore, the relationships among these variables can be conceptually illustrated as follows:

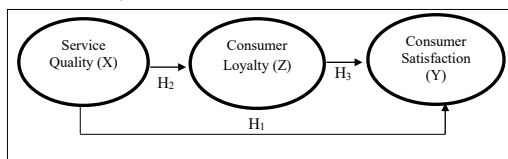


Figure 1. Theoretical Framework

2. Research Hypotheses

According to Sahir (2022), a hypothesis is an initial prediction or preliminary assumption in a study regarding the relationship between independent and dependent variables. Based on the conceptual framework presented in Figure 2.1, the hypotheses of this study are formulated as follows:

- H1: Service quality is hypothesized to have an effect on consumer loyalty at Sibmont Tire Repair Shop in Aceh Besar.
- H2: Service quality is hypothesized to have an effect on consumer satisfaction at Sibmont Tire Repair Shop in Aceh Besar.
- H3: Consumer satisfaction is hypothesized to have an effect on consumer loyalty at Sibmont Tire Repair Shop in Aceh Besar.
- H4: Consumer satisfaction is hypothesized to mediate the effect of service quality on consumer loyalty at Sibmont Tire Repair Shop in Aceh Besar.

3. Method

3.1 Research Design

This study uses a quantitative research approach with an associative research design. The quantitative approach is used because the data collected in this study are in the form of numerical data obtained through questionnaires and analyzed using statistical methods. The associative design is applied to examine the relationships and effects among the variables studied, namely service quality as the independent variable (X), consumer satisfaction as the intervening variable (Z), and consumer loyalty as the dependent variable (Y).

This study aims to examine the effect of service quality on consumer loyalty, the effect of service quality on consumer satisfaction, and the effect of consumer satisfaction on consumer loyalty. In addition, this study examines the role

of consumer satisfaction as an intervening variable in the relationship between service quality and consumer loyalty at Sibmont Tire Repair Shop in Aceh Besar.

3.2 Research Location and Time

This research was conducted at Sibmont Tire Repair Shop, located in Aceh Besar Regency, Aceh Province, Indonesia. The research location was selected because Sibmont Tire Repair Shop provides automotive repair and maintenance services and is directly related to the research variables, namely service quality, consumer satisfaction, and consumer loyalty.

The research was conducted from May to August 2026, covering the stages of preliminary observation, research preparation, questionnaire distribution, data collection, data processing, data analysis, and preparation of the research report.

3.3 Population and Sample

Population

According to Sugiyono (2019), a population is a general area consisting of subjects or objects with certain quantities and characteristics determined by the researcher to be studied and subsequently used as the basis for drawing conclusions. The population in this study consisted of all consumers of SibMont Tire Repair Shop in Aceh Besar.

Sample

The sample in this study was determined using purposive sampling. According to Sugiyono (2019), purposive sampling is a non-probability sampling technique in which respondents are selected based on certain considerations or specific objectives. In other words, research subjects are deliberately selected because they are considered to meet the criteria established by the researcher.

In this study, because the number of consumers of SibMont Tire Repair Shop in Aceh Besar is not known with certainty, an approach for determining the sample size for an unknown or infinite population was used. One of the methods applied is the Reo Purba formula, which is used to determine the minimum sample size for research involving an unknown or very large population. The use of this formula is considered appropriate for obtaining an adequate number of respondents so that the data can be statistically analyzed and can generally represent the characteristics of consumers of SibMont Tire Repair Shop in Aceh Besar.

The Reo Purba formula is as follows:

$$n = Z^2 \cdot p (1 - p) / e^2$$

Where:

n = sample size

Z = standard value = 1.96

p = maximum estimation = 50% = 0.5

e = margin of error = 10% = 0.1

The sample size was determined using the Purba formula as follows:

$$n = (1.96)^2 \times 0.5 \times (1 - 0.5) / (0.1)^2$$

$$n = 3.8416 \times 0.25 / 0.01$$

$$n = 96.04$$

Thus, the minimum sample size required for this study was approximately 96 respondents. Therefore, the study used 96 respondents as the research sample.

3.4 Research Instrument

The research instrument used in this study was a structured questionnaire. The questionnaire was developed based on the indicators of each research variable, namely service quality, consumer satisfaction, and consumer loyalty. The questionnaire was distributed to consumers of SibMont Tire Repair Shop in Aceh Besar who met the predetermined sampling criteria.

The questionnaire used a five-point Likert scale to measure respondents' responses to each statement. The scale consisted of: 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, and 5 = Strongly Agree. The use of the Likert scale was intended to quantify respondents' perceptions of service quality, consumer satisfaction, and consumer loyalty.

The research instrument consisted of statements representing the indicators of each variable. The service quality variable (X) was measured through five dimensions: reliability, responsiveness, assurance, empathy, and tangibles. The consumer satisfaction variable (Z) was measured through expectation conformity, repurchase intention, willingness to recommend, and satisfaction with product or service performance. Meanwhile, the consumer loyalty variable (Y) was measured through indicators related to repurchase intention, willingness to recommend, preference, and resistance to competitors.

Before being used for data collection, the questionnaire was tested to ensure that the instrument was appropriate for measuring the variables under study. The instrument testing included validity and reliability tests. The validity test was conducted to determine whether each questionnaire item adequately measured the intended variable, while the reliability test was conducted to assess the consistency of the instrument in measuring the research variables.

3.5 Data Analysis Technique

1. Validity Test

According to Sugiyono (2020:145), the validity test is used to measure how accurately respondents are asked to provide information through a questionnaire. The validity test in this study was conducted to examine whether the questionnaire items were valid. Validity indicates the extent to which a measurement instrument is accurate and precise in performing its measurement function.

The validity test was conducted using a two-tailed test with a significance level of 0.05. If the calculated correlation coefficient (r -count) is greater than the table correlation coefficient (r -table), the instrument or questionnaire item is considered to have a significant correlation with the total score and is declared valid. Conversely, if the r -count is smaller than the r -table, the instrument or questionnaire item is declared invalid.

2. Reliability Test

Reliability refers to the level of confidence in the results of a measurement. A measurement instrument with a high level of reliability is able to produce consistent and trustworthy measurement results and is therefore considered reliable. Sugiyono (2020:147) states that the minimum acceptable value for Cronbach's alpha is 0.60. Therefore, an instrument with a Cronbach's alpha

value of ≥ 0.60 can be considered reliable.

3. Classical Assumption Test

The use of multiple linear regression as a data analysis technique requires the classical assumption tests to be conducted. The classical assumption tests used in this study include the normality test, multicollinearity test, and heteroscedasticity test. Meanwhile, the autocorrelation test was not conducted because autocorrelation generally occurs in time-series data (Sekaran & Bougie, 2020:51).

Normality Test

The normality test is used to examine the distribution of the data and determine whether the data are normally distributed. Normality can be assessed by examining the Normal P-P Plot. Data are considered to be normally distributed when the expected probability values are consistent with the observed probability values. In the Normal P-P Plot, the similarity between the expected and observed probability values is indicated by a diagonal line, which represents the intersection between the expected and observed probability distributions. In other words, the data are considered normally distributed when the points in the Normal P-P Plot do not deviate substantially from the diagonal line (Sekaran & Bougie, 2020:69).

Multicollinearity Test

Multicollinearity indicates the existence of a linear relationship among the independent variables in a regression model. When the independent variables are perfectly correlated, this condition is referred to as perfect multicollinearity (Sekaran & Bougie, 2020:85). In this study, multicollinearity was assessed using the Variance Inflation Factor (VIF) value. If the VIF value is greater than 10, the variable is considered to have a multicollinearity problem with other independent variables. Conversely, if the VIF value is less than 10, it indicates that there is no multicollinearity.

Heteroscedasticity Test

The heteroscedasticity test aims to determine whether there is unequal variance of the residuals from one observation to another in the regression model. Several methods can be used to test for heteroscedasticity, including the graphical plot test, Park test, Glejser test, and White test. In this study, heteroscedasticity was examined using a scatterplot between the predicted values of the dependent variable, namely ZPRED, and the residuals, namely SRESID. Heteroscedasticity is considered absent when there is no clear pattern in the scatterplot and the points are randomly distributed above and below the value of 0 on the Y-axis (Ghozali, 2019:139).

4. Simultaneous Test (F-Test)

The simultaneous test (F-test) is used to examine whether the independent variables in the regression equation jointly have an effect on the dependent variable. The criteria for the hypothesis testing are as follows:

- If $F\text{-count} > F\text{-table}$, then H_a is accepted and H_0 is rejected at a 5% significance level.
- If $F\text{-count} < F\text{-table}$, then H_0 is accepted and H_a is rejected at a 5% significance level.

5. t-Test

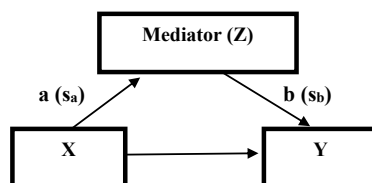
The partial test (t-test) is used to examine whether each independent variable in the regression equation individually has an effect on the dependent variable. The criteria for hypothesis testing are as follows:

- If $t\text{-count} > t\text{-table}$, then H_a is accepted and H_0 is rejected at a 5% significance level.
- If $t\text{-count} < t\text{-table}$, then H_0 is accepted and H_a is rejected at a 5% significance level.

6. Mediation Testing (Sobel Test)

The mediation hypothesis was tested using the Sobel test. According to Ghozali (2019:251), the Sobel test is used to determine whether the effect of a mediating variable, as obtained through path analysis, is statistically significant. The Sobel test requires the assumption that the coefficient of the mediation effect is normally distributed.

In this study, the Sobel test was conducted using calculations in SPSS Version 25.



$$Sab = \sqrt{b^2 Sa^2 + a^2 Sb^2 + Sa^2 Sb^2}$$

Figure 2. Mediation Testing (Sobel Test)

Description:

Sab: standard error of the mediation effect

a: path from X to Z

b: path from Z to Y

sa: standard error of coefficient a

sb: standard error of coefficient b

To test the significance of the mediation effect, the t-value can be calculated using the Sab value and the mediation coefficient (ab) according to the following formula:

$$t = ab / Sab$$

The calculated t-value is then compared with the critical t-value (t-table). If the t-count is greater than the t-table, it can be concluded that a significant mediation effect exists. Conversely, if the t-count is smaller than the t-table, it can be concluded that the mediation effect is not significant.

4. Results and Discussion

4.1 Respondent Characteristics

Respondent characteristics are presented to provide an overview of the identities of the consumers who served as the research subjects. This information describes the profile of respondents who provided assessments of service quality, consumer satisfaction, and consumer loyalty. In this study, respondents were categorized based on gender, age, and income level, as these three characteristics were considered relevant to consumers' perceptions in assessing the service quality provided by the tire repair shop and their levels of satisfaction and loyalty.

Table 1. Respondent Characteristics Based on Gender

No	Gender	Frequency	Percentage
1	Male	68	70,8
2	Female	28	29,2
Total		96	100.0

Based on Table 1, the majority of respondents were male, consisting of 68 respondents (70.8%), while female respondents accounted for 28 respondents (29.2%). This indicates that consumers of SibMont Tire Repair Shop in Aceh Besar were predominantly male.

Table 2. Respondent Characteristics Based on Age

No	Respondent Age	Frequency	Percentage (%)
1	≤ 19 years	12	17,7%
2	20-23 years	30	37,5%
3	24-26 years	38	29,2%
4	≥ 27 years	16	15,6%
Total		96	100%

Based on Table 2, it can be seen that the majority of respondents were in the 24–26 years age group, consisting of 38 respondents (39.6%). This indicates that customers of SibMont Tire Repair Shop in Aceh Besar were predominantly within the productive age group. In addition, the composition of respondents across various age groups indicates that the research sample was sufficiently diverse and was able to represent the characteristics of customers of SibMont Tire Repair Shop in Aceh Besar. This finding is consistent with previous research stating that the productive-age group is the group that most actively utilizes vehicle maintenance and repair services.

Table 3. Respondent Characteristics Based on Income

No	Income	Frequency	Percentage (%)
1	≤ 1 million	17	17,7%
2	2–3 million	36	37,5%
3	4–5 million	28	29,2%
4	≥ 6 million	15	15,6%
Total		96	100%

Based on Table 3, it can be seen that the majority of respondents had an income of IDR 2,000,000–IDR 3,000,000, consisting of 36 respondents (37.5%). This indicates that most consumers of SibMont Tire Repair Shop in Aceh Besar came from the middle-income group. This characteristic indicates that the research sample included consumers with diverse income levels, thereby providing a representative overview of the customer profile of SibMont Tire Repair Shop in Aceh Besar. This finding is consistent with previous research indicating that consumers with

middle-income levels generally constitute the dominant group utilizing vehicle maintenance and repair services.

4.2 Data Analysis Results

1. Validity Test

The validity test was conducted to determine whether the statements in the questionnaire were valid and appropriate for measuring the intended variables. A questionnaire is considered valid if its statements are able to accurately measure the construct being assessed. If the calculated r-value (r-count) is greater than the critical r-value (r-table) and has a positive value, the statement item or indicator is considered valid. Therefore, if the r-count is greater than the r-table at a 5% significance level, the statement is declared valid (Ghozali, 2019). The complete results of the validity test are presented below:

Table 4. Validity Test

Question Item	Question Item	r-count	r-count	Description
Item A1	Y	0.694	0.198	Valid
Item A2		0.674	0.198	Valid
Item A3		0.698	0.198	Valid
Item A4		0.707	0.198	Valid
Item B1	X	0.723	0.198	Valid
Item B2		0.668	0.198	Valid
Item B3		0.747	0.198	Valid
Item B4		0.665	0.198	Valid
Item C5	Z	0.671	0.198	Valid
Item C1		0.778	0.198	Valid
Item C2		0.763	0.198	Valid
Item C3		0.709	0.198	Valid
Item C4		0.729	0.198	Valid

The table above shows that the correlation between each statement item and the total score of the respective variable meets the validity criteria. This can be seen from the r-count values of the items, which are greater than the r-table value of 0.198 at a 5% significance level ($\alpha = 0.05$). Of the 13 items tested, all items have an r-count value greater than 0.198 and are therefore declared valid. Thus, all valid items for variables X, Y, and Z are appropriate for use as research instruments to measure the variables examined in this study.

2. Reliability Test

Reliability refers to the ability of an instrument to consistently measure a questionnaire that serves as an indicator of a variable or construct. A questionnaire is considered reliable if the responses to the statements are consistent or stable over time. In this study, SPSS provides a facility for measuring reliability using the statistical test *Cronbach's Alpha* (α). A variable or construct is considered reliable if it produces a Cronbach's Alpha (α) value of ≥ 0.60 (Ghozali, 2019:47). The results of the reliability test for each variable are summarized in the following table:

Table 5. Reliability Test

Variable	Cronbach's Alpha	Criterion	Status
Consumer	0.640	0.60	Reliable

Loyalty (Y)			e
Service Quality (X)	0.731	0.60	Reliable
Consumer Satisfaction (Z)	0.732	0.60	Reliable

The results of the reliability test indicate that all variables have sufficiently high Cronbach's Alpha coefficients, with a value of 0.640 for variable Y, 0.731 for variable X, and 0.732 for variable Z. Since all Cronbach's Alpha values are above the minimum criterion of 0.60, the measurement constructs for each variable in the questionnaire can be considered reliable. Therefore, the items representing each variable construct are appropriate for use as measurement instruments in the subsequent stages of the research.

4.3 Classical Assumption Test

Before conducting multiple linear regression analysis, a classical assumption test was first conducted to ensure that the regression model used met the requirements of the Best Linear Unbiased Estimator (BLUE). The classical assumption tests included the normality test, multicollinearity test, and heteroscedasticity test.

1. Normality Test

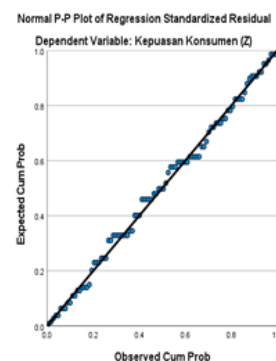


Figure 3. Normality Test

Based on Figure 3, it can be concluded that the data used in this study indicate a normal distribution. The analysis of the graph shows that the data points are distributed around the diagonal line and follow the direction of the diagonal line. If the data are distributed around the diagonal line and follow its direction, the regression model meets the normality assumption. Conversely, if the data are distributed far from the diagonal line and/or do not follow its direction, the regression model does not meet the normality assumption. Therefore, the regression model is considered appropriate for predicting Consumer Loyalty based on the independent variable inputs. The results of the data normality test for the second model are presented in Figure 4 below:

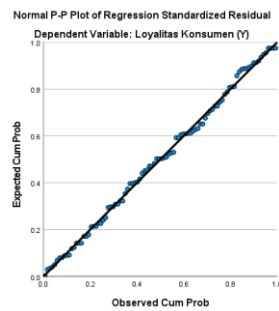


Figure 4. Normality Test Model II

Based on Figure 4, it can be concluded that the data used in this study indicate a normal distribution. The analysis of the graph shows that the data points are distributed around the diagonal line and follow the direction of the diagonal line.

2. Multicollinearity Test

The multicollinearity test aims to determine whether there is a correlation among the independent variables in the regression model. If a correlation occurs, it indicates a multicollinearity problem. A good regression model should not have correlations among the independent variables. In this study, multicollinearity was assessed by examining the Variance Inflation Factor (VIF) value. The results of the multicollinearity test for the first model are presented in Table

Table 6. Multicollinearity Test Model I

Independent Variable	Tolerance	VIF	Description
Service Quality (X)	1.000	1.000	No Multicollinearity
a. Note: Dependent Variable: Consumer Satisfaction (Z)			

Based on Table 6, it can be seen that none of the independent variables has a Tolerance value below 0.10, indicating that there is no correlation among the independent variables. The calculation of the Variance Inflation Factor (VIF) also shows that the independent variable has a VIF values below 10. Therefore, it can be concluded that there is no multicollinearity among the independent variables in the regression model used in this study. The results of the multicollinearity test for the second model are presented in Table 7.

Table 7. Multicollinearity Test Model II

Independent Variable	Tolerance	VIF	Description
Service Quality (X)	0.462	2.165	Non-multicollinearity
Consumer Satisfaction (Z)	0.462	2.165	Non-multicollinearity

Based on Table 7, it can be seen that none of the independent variables has a Tolerance value below 0.10, indicating that there is no correlation among the independent variables. The calculation of the Variance Inflation Factor (VIF)

also shows that none of the independent variables has a VIF value greater than 10. Therefore, it can be concluded that there is no multicollinearity among the independent variables in the regression model used in this study.

3. Heteroscedasticity Test

The heteroscedasticity test aims to determine whether there is unequal variance of residuals from one observation to another in the regression model. A good regression model should not exhibit heteroscedasticity. In this study, the heteroscedasticity test for the first regression equation was conducted using SPSS by examining the pattern shown in the Scatterplot. The results are presented in Figure 5.

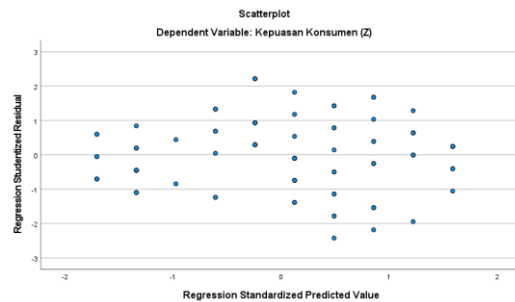


Figure 5. Heteroscedasticity Test

Based on Figure 5, the heteroscedasticity test shows that the data points are randomly distributed, do not form any clear pattern, and are scattered both above and below the value of 0 on the Y-axis. This indicates that there is no heteroscedasticity (Malhotra, 2016:268). The results of the heteroscedasticity test for the second regression equation are presented in Figure 6.

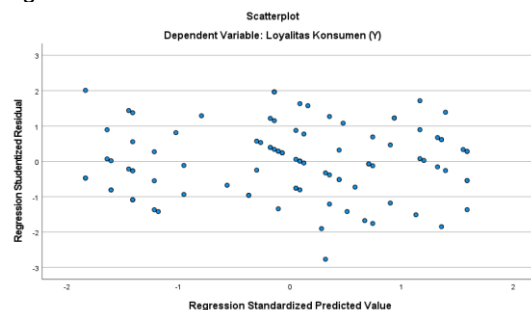


Figure 6. Heteroscedasticity Test Model II

The results of the heteroscedasticity test show that the data points are randomly distributed, do not form any clear pattern, and are scattered both above and below the value of 0 (zero) on the Y-axis. This indicates that there is no violation of the classical assumption of homoscedasticity in the regression model.

4.4 Hypothesis Testing

The analysis used to test the hypotheses was multiple linear regression analysis. Based on the results of multiple linear regression analysis using SPSS version 27, the following regression equation was obtained:

1. The Effect of Service Quality on Consumer Loyalty at SibMont Tire Repair Shop in Aceh Besar

The partial test (t-test) results show that the Service Quality variable (X) has a regression coefficient of 0.408, a t-value of 5.974, and a significance value of 0.000. Since the significance

value is less than 0.05 ($0.000 < 0.05$), it can be concluded that Service Quality has a positive and significant effect on Consumer Loyalty at SibMont Tire Repair Shop in Aceh Besar. The positive regression coefficient indicates that the better the service quality provided to consumers, the higher the level of consumer loyalty toward the tire repair shop.

The results of this study indicate that consumers tend to continue using the services of SibMont Tire Repair Shop in Aceh Besar when they receive satisfactory service, such as timely service, friendly employees, clear information, and quality work that meets their expectations. Therefore, improving service quality is an important strategy for the tire repair shop to retain existing customers while increasing consumer loyalty in the long term. These results also strengthen marketing theory, which states that service quality is a key factor in building long-term relationships with customers.

2. The Effect of Service Quality on Consumer Satisfaction at SibMont Tire Repair Shop in Aceh Besar

The partial test (t-test) results show that the Service Quality variable (X) has a regression coefficient of 0.616, a t-value of 10.465, and a significance value of 0.000. Since the significance value is less than 0.05 ($0.000 < 0.05$), it can be concluded that Service Quality has a positive and significant effect on Consumer Satisfaction at SibMont Tire Repair Shop in Aceh Besar. The positive regression coefficient indicates that the better the service quality provided to consumers, the higher the level of consumer satisfaction with the services received at SibMont Tire Repair Shop in Aceh Besar.

The results of this study indicate that consumers will feel more satisfied when SibMont Tire Repair Shop in Aceh Besar is able to provide high-quality services, such as fast and accurate service, friendly employees, competent mechanics in handling vehicles, clear information, and facilities that support customer comfort. Therefore, improving service quality is an important strategy for increasing consumer satisfaction. These results also strengthen marketing theory, which states that service quality is one of the main factors influencing consumer satisfaction because services that meet or even exceed customer expectations will create a positive experience after consumers use the company's services.

3. The Effect of Consumer Satisfaction on Consumer Loyalty at SibMont Tire Repair Shop in Aceh Besar

The partial test results show that the Consumer Satisfaction variable (Z) has a regression coefficient of 0.345, a t-value of 4.237, and a significance value of 0.000. Since the significance value is less than 0.05 ($0.000 < 0.05$), it can be concluded that Consumer Satisfaction has a positive and significant effect on Consumer Loyalty at SibMont Tire Repair Shop in Aceh Besar. This means that the higher the level of consumer satisfaction, the higher the level of consumer loyalty toward the tire repair shop.

The results of this study indicate that consumers who are satisfied with the service, quality

of work, reasonable prices, and overall experience obtained while using the services of SibMont Tire Repair Shop in Aceh Besar tend to make repeat purchases, recommend the tire repair shop to others, and are less likely to switch to competitors. Therefore, consumer satisfaction is an important factor in creating customer loyalty. The tire repair shop needs to continuously maintain service quality and consistently fulfill consumer expectations.

4. The Effect of Service Quality on Consumer Loyalty with Consumer Satisfaction as an Intervening Variable at SibMont Tire Repair Shop in Aceh Besar

The analysis results show that Service Quality continues to have a positive and significant effect on Consumer Loyalty even when Consumer Satisfaction is included as an intervening variable. This is evidenced by the regression coefficient of Service Quality of 0.408, a t-value of 5.974, and a significance value of 0.000. Meanwhile, Consumer Satisfaction also has a significant effect on Consumer Loyalty, with a regression coefficient of 0.345, a t-value of 4.237, and a significance value of 0.000. These findings indicate that Service Quality affects Consumer Loyalty not only directly but also indirectly through an increase in Consumer Satisfaction.

Therefore, Consumer Satisfaction serves as an intervening variable that bridges the relationship between Service Quality and Consumer Loyalty. The better the service quality provided by SibMont Tire Repair Shop in Aceh Besar, the higher the level of consumer satisfaction, which ultimately strengthens consumer loyalty toward the tire repair shop. If the mediation test results, such as the Sobel Test, also show a calculated Z-value greater than 1.96 or a significance value less than 0.05, it can be concluded that Consumer Satisfaction significantly mediates the effect of Service Quality on Consumer Loyalty. If Service Quality remains significant after Consumer Satisfaction is included in the model, the mediation is classified as partial mediation.

4.5 Regression Model

1. Regression Model I

To determine the effect of Service Quality on Consumer Loyalty with Consumer Satisfaction as an intervening variable, it is important to examine the relationship at SibMont Tire Repair Shop in Aceh Besar. Regression analysis was conducted to determine the linear relationship among the variables. The regression analysis involved three variables, namely Consumer Loyalty (Y), Service Quality (X), and Consumer Satisfaction (Z). The results of the first equation or regression model are presented in Table 8.

Table 8. Regression Model I

Item	Unstandardized Coefficients		Standardized Coefficients	t	Significance
	B	Std. Error	Beta		
(Constant)	3.836	1.168		3.283	0.001
Service	0.616	0.0	0.734	10.	0.

Quality (X)		59		46	00
Correlation Coefficient [R]	0.734			5	0
R Square	0.538				

Based on the SPSS output presented in the table above, the linear regression equation can be formulated as follows:

$$Z = \rho_{zx} X + e_2$$

$$Z = 0.734X$$

The correlation coefficient (R) of 0.734 indicates a positive relationship between Service Quality (X) and Consumer Satisfaction (Z), with a correlation strength of 73.4%. This indicates that the relationship between Service Quality and Consumer Satisfaction is strong.

The coefficient of determination (R^2) of 0.538 indicates that Service Quality contributes 53.8% to Consumer Satisfaction at SibMont Tire Repair Shop in Aceh Besar. This means that the remaining 46.2% is influenced by other variables not included in this research model. Therefore, there are still other factors that may contribute to increasing Consumer Satisfaction.

2. Regression Model II

The results of the second regression equation or model are presented in Table 9 below.

Table 9. Model Regresi II

Item	Unstandardized Coefficients		Standardized Coefficients	t	Sig
	B	Std. Error	Beta		
(Constant)	2.310	0.973		2.373	0.020
Service Quality (X)	0.408	0.068	0.517	5.974	0.000
Consumer Satisfaction (Z)	0.345	0.081	0.366	4.237	0.000
Correlation Coefficient	0.824				
Adjusted R Square	0.679				

Based on the SPSS output presented in the table above, the linear regression equation can be formulated as follows:

$$Y = \rho_{zx} X + \rho_{yz} Z + e_4$$

$$Y = 0.408X + 0.345Z$$

The correlation coefficient (R) of 0.824 indicates the relationship between Service Quality and Consumer Satisfaction in relation to the conditions of consumers at SibMont Tire Repair Shop in Aceh Besar, with a correlation strength of 82.4%. This relationship is considered strong. The coefficient of determination (Adjusted R^2) of 0.679 indicates that Service Quality and Consumer Satisfaction jointly contribute 67.9% to Consumer Loyalty at SibMont Tire Repair Shop in Aceh Besar. Meanwhile, the remaining 32.1% is influenced by other variables outside the research model.

An independent variable is considered to have an effect on the dependent variable if its significance value is below 0.05. Conversely, if the significance value is above 0.05, the independent variable is considered to have no effect on the dependent variable. Based on this explanation and the results of the first and second regression equations, the relationships among the variables based on the direct-effect test in this study are presented as follows.

4.6 Mediation Testing (Sobel Test)

The mediation hypothesis can be tested using the procedure developed through the Sobel Test. According to Ghazali (2019), the Sobel Test is used to examine whether the effect of an intervening variable obtained from path analysis is statistically significant. The Sobel Test requires the assumption that the value of the mediation coefficient is normally distributed.

Coefficients ^a							
Model	B	Std. Error	Beta	t	sig	Tolerance	VIF
1 (Constant)	3.836	1.168		3.283	0.001		
Service Quality (X)	0.616	0.059	0.734	10.465	0.000	1.000	1.000

a. Dependent Variable: Consumer Satisfaction (Z)

Figure 7 Mediation Test Results

Coefficients ^a							
Model	B	Std. Error	Beta	t	sig	Tolerance	VIF
1 (Constant)	2.310	0.973		2.373	0.020		
Service Quality (X)	0.408	0.068	0.517	5.974	0.000	0.462	2.165
Consumer Satisfaction (Z)	0.345	0.081	0.366	4.237	0.000	0.462	2.165

a. Dependent Variable: Consumer Loyalty (Y)

Figure 8 Mediation Test Results

The regression results show that the coefficient of Service Quality on Consumer Satisfaction is 0.616, with a standard error of 0.059 and a significance value of 0.000. Meanwhile, the coefficient of Consumer Satisfaction on Consumer Loyalty is 0.345, with a standard error of 0.081 and a significance value of 0.000. Thus, Service Quality has a significant effect on Consumer Loyalty through Consumer Satisfaction.

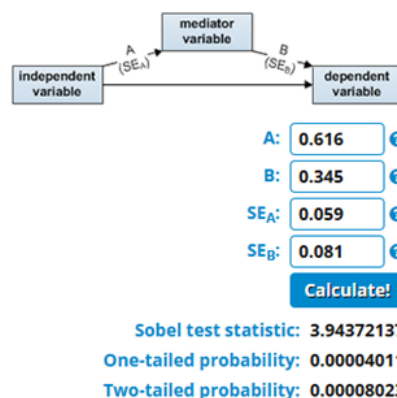


Figure 9 Online Sobel Test

Based on the results of the Sobel Test, the path coefficient A was 0.616 with a standard error

(SEA) of 0.059, while the path coefficient B was 0.345 with a standard error (SEB) of 0.081. The calculation results show that the Z-value (Sobel Test Statistic) was 3.9437, with a significance value (two-tailed probability) of 0.00008023. Based on the criteria of the Sobel Test, a mediating variable is considered to have a significant effect if the Z-value is greater than 1.96 and the significance value (Sig.) is less than 0.05 at a 95% confidence level. Since the Z-value of 3.9437 > 1.96 and the significance value of 0.00008023 < 0.05, the mediation hypothesis is accepted.

The results of the study indicate that Consumer Satisfaction serves as a partial mediating variable (*Partial Mediation/Complementary Mediation*) because the direct effect of Service Quality on Consumer Loyalty remains significant, while the indirect effect through Consumer Satisfaction is also significant based on the Sobel Test results. Therefore, Service Quality can increase Consumer Loyalty both directly and indirectly through increased Consumer Satisfaction, indicating that the mediation model proposed in this study is supported.

4.7 Theoretical Implications

The results of the study show that Service Quality has a positive and significant effect on Consumer Satisfaction and Consumer Loyalty. In addition, Consumer Satisfaction also has a positive and significant effect on Consumer Loyalty and is able to mediate the effect of Service Quality on Consumer Loyalty. These findings strengthen the service marketing theory, which states that good service quality will increase consumer satisfaction, which ultimately encourages the development of consumer loyalty.

The results of this study are consistent with the research conducted by Muhammad Taufik, Emil Salim, and Nila Pratiwi (2024), which found that Service Quality has a positive and significant effect on consumer satisfaction and loyalty, while Consumer Satisfaction has a positive effect on Consumer Loyalty. These findings are also consistent with the research conducted by Bangun Yudhanto, Handojo Djoko Waloejo, and Naili Farida (2022), which demonstrated that Consumer Satisfaction is able to mediate the effect of Service Quality on Consumer Loyalty. Furthermore, this study supports the findings of Nura Urfany and Muchsin Muthohar (2022), as well as Hartati Dwi Nawastuty, Ida Bagus Nyoman Udayana, and Agus Dwi Cahya (2022), which showed that Service Quality and Consumer Satisfaction have positive effects on Consumer Loyalty.

For SibMont Tire Repair Shop in Aceh Besar, the results of this study imply that improving service quality should be a primary concern in maintaining consumer loyalty. These efforts can be implemented by improving employee friendliness and politeness, enhancing service speed and accuracy, increasing mechanic competence, and providing comfortable facilities for customers. In addition, regular evaluation of service quality through customer satisfaction surveys, prompt complaint handling, and continuous human resource training should be carried out to maintain consumer satisfaction. As consumer satisfaction increases, customer loyalty is expected to be-

come stronger, thereby enhancing the competitiveness of SibMont Tire Repair Shop in Aceh Besar amid competition in the automotive service industry.

5. Conclusions and Suggestions

5.1 Conclusions

Based on the results of the study regarding the effect of Service Quality on Consumer Loyalty with Consumer Satisfaction as an intervening variable at SibMont Tire Repair Shop in Aceh Besar, several conclusions can be drawn as follows:

1. Service Quality has an effect on Consumer Loyalty at SibMont Tire Repair Shop in Aceh Besar.
2. Service Quality has an effect on Consumer Satisfaction at SibMont Tire Repair Shop in Aceh Besar.
3. Consumer Satisfaction has an effect on Consumer Loyalty at SibMont Tire Repair Shop in Aceh Besar.
4. Consumer Satisfaction mediates the effect of Service Quality on Consumer Loyalty at SibMont Tire Repair Shop in Aceh Besar.

5.2 Suggestions

Based on the results of the research that has been conducted, the researcher provides several suggestions as follows:

1. For SibMont Tire Repair Shop in Aceh Besar, it is recommended to pay attention to factors that can increase consumer loyalty, such as service quality and consumer satisfaction, so that consumers will continue to use the services of the tire repair shop and even be willing to recommend the tire repair shop to their family, friends, or relatives.
2. For SibMont Tire Repair Shop in Aceh Besar, it is recommended to continuously improve service quality by providing fast, friendly, professional, and timely services. In addition, mechanic competence and communication with customers should be continuously improved so that consumers feel comfortable and remain loyal to using the services of the tire repair shop.
3. For SibMont Tire Repair Shop in Aceh Besar, it is necessary to improve consumer satisfaction by regularly evaluating service quality through customer feedback and internal assessments. Improvements in supporting facilities, cleanliness of the workshop environment, and excellent service training for employees should also be carried out so that the services provided are increasingly aligned with consumer expectations and consumers feel satisfied when using the services of the tire repair shop.
4. For future researchers, it is recommended to develop this research by adding other variables that may influence consumer loyalty, such as price, trust, corporate image, or customer value. In addition, future research may be conducted on different research objects with a larger number of respondents and by using more comprehensive analytical methods in order to obtain broader and more in-depth research findings.

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