MAGISTER MANAJEMEN-UNISSULA
SAMaJ
SULTAN AGUNG MANAGEMENT JOURNAL

Increasing Customer Loyalty Based on Service Quality With Customer Satisfaction as a Mediation Variable

Zanik Hanifah
Faculty of Economic, Universitas Islam Sultan Agung (UNISSULA) Semarang, Indonesia, E-mail: zanik.hanifah@gmail.com

Abstract. *Customer loyalty is a strategic asset for website development service providers operating in a highly competitive market with low switching costs. The Sandaran in Semarang website has not met its loyalty targets: repeat orders reached only 35% of the 60% target, customer retention 58% of the 80% target, and repeat projects 35% of the 50% target, while previous findings on the effect of service quality on customer loyalty remained inconsistent. This study analyzes the effect of service quality on customer loyalty with customer satisfaction as a mediating variable among Website Sandaran customers in Semarang. A quantitative approach was used with primary data from 200 respondents collected through a five-point Likert-scale questionnaire and analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) with SmartPLS 4.0. The results show that service quality has a positive and significant effect on customer satisfaction (path coefficient 0.843; p-value 0.000), and customer satisfaction has a positive and significant effect on customer loyalty (path coefficient 0.855; p-value 0.000). The direct effect of service quality on customer loyalty is not significant (path coefficient 0.048; p-value 0.357), whereas its indirect effect through customer satisfaction is significant (0.721; p-value 0.000), indicating full mediation. These findings show that improving customer loyalty cannot rely on service quality alone but must be channeled through customer satisfaction. Managerial recommendations include customer segmentation based on the frequency of consultation use, a customer satisfaction feedback system, and value-added services in the form of personal consultation and digital marketing training.*

Keywords: *Customer; Loyalty; Mediation; Quality; Satisfaction.*

1. Introduction

Technological advancements have fundamentally changed the way businesses operate worldwide, including in Indonesia. In this digital era, the proliferation of business platforms and websites has created intense competition in the digital services industry. Websites are no longer merely informational media, but have evolved into complex business platforms with various strategic funding, ranging from marketing and transactions to after-sales service. This digital transformation phenomenon requires companies to not only attract new customers but also retain existing ones through appropriate and sustainable strategies. In the context of global competition, the existence of a website as a company's digital

representation is crucial because it serves as the primary point of interaction between the company and its customers. Therefore, companies need to develop specific strategies to build and maintain long-term relationships with customers in this challenging digital era.

The increasing need for digitalization is in line with the growth of the Micro, Small, and Medium Enterprises (MSMEs) sector, which is the backbone of the national economy. Data from the Central Statistics Agency (BPS) shows that MSMEs contribute approximately 61% to the national Gross Domestic Product (GDP) and absorb approximately 97% of the Indonesian workforce. However, BPS recorded that only approximately 41.51% of businesses had utilized e-commerce by 2023, with the largest concentration in Java and Sumatra. The Ministry of Cooperatives and SMEs also reported that the number of MSMEs that had joined the digital ecosystem reached approximately 25–27 million units by the end of 2023–2024, still below the government's target of 30 million MSMEs going digital. This data indicates that the process of business digitalization in Indonesia continues to increase, while simultaneously creating a growing demand for website creation and management services as the main infrastructure for businesses' digital presence.(Rafieq et al. nd)

The increasing demand for digitalization has also driven the growth of the website creation services industry in Indonesia. Data from the Indonesian Internet Domain Name Manager (PANDI) recorded that the number of domains ending in .id increased from 951,241 domains in 2023 to 1,215,714 domains in 2024, or a growth of around 28% in one year, and is projected to reach more than 1.5 million domains by 2025. The market value of the website creation services industry in Indonesia in 2025 is projected to reach IDR 2.6 trillion, with the need for local web developers estimated at around 9,000 people. This rapid market growth has encouraged the emergence of more website service providers and digital agencies, making competition to attract and retain customers increasingly fierce.(Putra et al. 2025).

This intense competition is also reflected in the development of the digital startup ecosystem in Indonesia. According to Startup Ranking data, the number of startups in Indonesia is expected to reach around 2,600 by 2024, placing Indonesia first in Southeast Asia and sixth in the world in terms of the number of startups. The high number of new players in this digital ecosystem creates significant competitive pressure for digital service providers, including website builders, to not only attract new customers but also maintain the loyalty of existing ones amidst the numerous alternative providers of similar services available (low switching costs).(Salam et al. 2024)

Customer loyalty has become a crucial strategic asset for business sustainability, particularly in the digital service industry, which is characterized by high competition and relatively low switching costs. Oliver (2010) identifies customer loyalty as a deep commitment to re-patronize or re-purchase a product or service consistently in the future, despite situational influences and marketing efforts that have the potential to change behavior. This concept has a multifaceted dimension that encompasses behavioral and attitudinal aspects.(Umar 2014).

Empirical studies have consistently shown that customer loyalty plays a crucial role in ensuring a positive and significant contribution to the stability and growth of a company's financial performance. Research by Rabbanee et al.(2018)found that loyal customers not only make repeat purchases, but also act as brand promoters, spreading positive word-of-mouth and resisting competitors' offerings. In the context of digital business, Watto and Iqbal(2022)identified that customer loyalty is driven by positive experiences, perceived value, and satisfaction accumulated from ongoing interactions with a service provider. Furthermore, loyal customers tend to be more tolerant of price increases and more willing to purchase additional products or services (cross-selling and up-selling), thereby increasing a company's customer lifetime value.

In the website and technology services industry, customer loyalty has its own complexities due to the high intangibility and variability of services. According to research by M, Militina, and Achamad(2020), customer loyalty in the context of digital services is characterized by repeat purchasing behavior based on consideration of previous experiences, so that building trust becomes a fundamental factor.

Service quality has long been recognized as a key determinant in shaping customer perceptions and influencing purchasing decisions and loyalty.Parasuraman, Zeithaml, and Berry (1985)In their SERVQUAL model, they define service quality as the comparison between customer expectations (expected service) and their perception of the actual service received (perceived service). When the service received meets or exceeds expectations, customers will experience satisfaction, which in turn can foster loyalty.

Service quality is a key factor in shaping customer perceptions of a company and influencing their decision to continue using a product or service. From a service marketing perspective, Parasuraman, Zeithaml, and Berry (1988) developed the SERVQUAL model, which explains that service quality is determined by the gap between customer expectations (expected service) and the service they actually experience (perceived service). The smaller the gap between expectations and the service received, the higher the customer's perception of the quality of the company's service.

The SERVQUAL model measures service quality through five main dimensions: tangibles, reliability, responsiveness, assurance, and empathy. The tangibles dimension reflects the condition of physical facilities, equipment, technology, and the appearance of personnel supporting the service process. Reliability demonstrates a company's ability to provide services accurately, consistently, and in accordance with promises made. Responsiveness describes a company's willingness to assist customers quickly, responsively, and in a timely manner. Assurance relates to employee competence, knowledge, courtesy, and the ability to foster customer trust and confidence in the company. Meanwhile, empathy reflects the company's attention, concern, and ability to understand the needs and provide personalized service to each customer.

In the context of a company providing website creation and management services, the five SERVQUAL dimensions are crucial for creating a positive customer experience. Customers not only assess the quality of the final website but also evaluate the team's professionalism, timely project completion, speed of response to customer needs, ability to provide appropriate solutions, and the company's attention to each customer's specific needs.

In the context of digital services and websites, service quality has unique characteristics that differ from traditional services. Qayyum et al.(2013) explains that service quality is a reflection of customer values regarding the company's overall performance in maintaining a service. Aslam et al. (2018)explains that service quality is the most important factor related to customer satisfaction, where a high level of service quality will increase the probability of repeat purchases and positively influence consumer behavior.

Empirical studies show a strong causal relationship between service quality and customer loyalty. Liu et al.(2011)) in their research found that service quality has a positive and significant effect on customer loyalty. This research was supported by Izogo and Ogba(2015)stated that there is a significant influence between service quality and customer loyalty, especially in the service sector. Miranda et al.(2018)added that customer satisfaction is directly influenced by service quality in the context of service, creating a chain effect that leads to loyalty.

In the website service industry, the dimensions of service quality include aspects such as timeliness, consistency, comfort, and completeness of services provided to customers. Zaimah's research(2022)shows that innovation in service quality can have a greater impact in increasing customer satisfaction, which ultimately contributes to the formation of long-term loyalty.

Although the literature on the influence of service quality on customer loyalty is quite extensive, previous research findings have been inconsistent. A summary of several previous research findings on the influence of service quality on customer loyalty is presented in Table below.

Table Inconsistency of Previous Research Results on the Influence of Service Quality on Customer Loyalty

Researchers	Object	Results
Fitriana & Susanti (2022)	GrabFood	Service Quality → Significant Customer Loyalty
Ellitan & Sonbay (2022)	Samsung	Service Quality → Customer Loyalty is not significant
Carolina et al. (2023)	Commuterline Train	Service Quality → Significant Customer Loyalty
Anzahri et al. (2025)	Tiket.com	Service Quality → Customer Loyalty is not significant, but Perceived Value mediates significantly.
Use (2022)	BNI Mobile Banking	Service Quality → Significant Customer Loyalty

Previous research has shown inconsistencies regarding the effect of service quality on customer loyalty. Some studies found a positive and significant effect, while others showed an insignificant effect. This discrepancy in results indicates a research gap that requires further study, particularly in website development companies characterized by project-based services and long-term customer relationships.

In addition to the inconsistency of the results, this research gap is also reinforced by the existence of a contextual gap. Most previous research has been conducted in the e-commerce, hotel, restaurant, airline, and marketplace sectors, so the characteristics of customer relationships in these sectors differ from website development companies, which have project-based service processes and long-term relationships between service providers and customers. These characteristics make interaction patterns and loyalty formation in the website development industry different from sectors that have been widely studied previously, so it is necessary to examine the context of website development companies, digital agencies, and website developers such as Website Sandaran.

From a methodological perspective, previous studies have often used regression analysis and Covariance-Based Structural Equation Modeling (SEM-AMOS) approaches, which tend to only test direct effects between variables. This study uses a Partial Least Squares-Based Structural Equation Modeling (SEM-PLS) approach, which can simultaneously test both direct and indirect relationships through mediating variables, with a different research object: Sandaran Website customers. This difference in analytical approach and research object reinforces the urgency of conducting research in a context different from previous studies.(Anzahri et al. 2025).

Despite the extensive literature on the relationship between service quality, perceived value, satisfaction, and customer loyalty, several significant research gaps remain, particularly in the context of the Indonesian website services industry. Most previous research has been conducted in mature industries such as banking, telecommunications, or traditional retail. Research specifically exploring the dynamics of customer loyalty in the website services startup industry is still limited. This industry has unique characteristics such as rapid innovation, high competitive intensity, and low switching costs, which require a different approach to building loyalty.

Several previous studies have used a relatively simple approach to analyzing the relationship between variables, often only testing the direct effect without considering the complexity of multiple mediation. Jiang et al.(2016)and Azad et al. (2019) have examined the mediating role of perceived value, but there is little research that simultaneously examines the mediating role of perceived value and customer satisfaction in an integrated model, particularly in the context of digital services.

The Indonesian website service startup industry faces a specific challenge in terms of low retention rates. Data shows that customer churn rates in the Indonesian tech startup industry reach 20-30% per year, indicating that current loyalty-building strategies are ineffective. The

Sandaran website, the subject of this study, experiences a similar phenomenon. Despite its competitive service portfolio, repeat order rates and customer lifetime value remain below expected targets.

Website service startup industry in Indonesiafacing challenges in retaining customers (customer retention) amidst high levels of competition and low customer switching costs(Anzahri et al. 2025). The Sandaran website, as the object of this research, experienced a similar phenomenon where despite having a competitive service portfolio, the repeat order rate and customer lifetime value were still below the expected target.

Sandaran Website, a company specializing in website creation and management services, faces challenges in building customer loyalty amidst the increasingly competitive digital industry. The company has undertaken various efforts to improve service quality, including providing responsive service, tailored consultations, timely project completion, and post-project maintenance. However, the company's customer loyalty levels have yet to meet its stated targets.

This condition can be seen from several customer loyalty indicators that show achievements below the company's target. The repeat order rate of new customers has reached 35% of the target of 60%, while customer retention has only reached 58% of the target of 80%. Furthermore, the percentage of repeat projects remains at 35% or below the target of 50%, while customer lifetime value has also not reached the company's target. The data shows that some customers have not made repeat purchases, have not continued cooperation on subsequent projects, or have not been able to provide long-term economic value for the company. This condition indicates that customer loyalty on the Sandaran Website is still not optimal, so further analysis of the factors that influence it is needed. An overview of the condition of customer loyalty on the Sandaran Website in 2025 is presented in Table.

Table Customer Loyalty Conditions of the Supporting Website in 2025

Indicator	Target	Realization	Information
Repeat Order	60%	35%	Not yet achieved
Customer Retention	80%	58%	Not optimal
Repeat Project	50%	35%	Low
Customer Lifetime Value	Company targets	Not yet achieved	Needs improvement

Table shows that most customer loyalty indicators have not yet reached the company's targets. This indicates that customer loyalty remains relatively low, requiring an analysis of the influencing factors.

Findings on the Sandaran website indicate that customer satisfaction levels have not yet fully translated into customer loyalty. Based on the company's evaluation, some customers still rate the service highly, but do not make repeat purchases or continue the collaboration on subsequent projects. This situation indicates that customer satisfaction alone does not necessarily encourage customers to continue using a company's services. This phenomenon indicates that the relationship between service quality, customer satisfaction, and customer

loyalty has a more complex mechanism and requires further testing. Consistent with the findings of Slack and Singh (2020), customer satisfaction acts as a mediating variable in explaining the effect of service quality on customer loyalty.

This research is significant both academically and practically. From an academic perspective, this research is expected to enrich the study of customer behavior by examining the role of service quality and customer satisfaction as mediating variables in the relationship between service quality and customer loyalty in the website creation and management services industry. From a practical perspective, the research results are expected to provide a basis for Website Sandaran in formulating strategies to improve service quality that can create higher value for customers, increase satisfaction, and strengthen customer loyalty in a sustainable manner.

Based on the description of empirical phenomena and the results of previous research, there are still differences in findings regarding the effect of service quality on customer loyalty. Some studies indicate a positive and significant effect, while others found that this effect is not direct and requires the role of perceived value and customer satisfaction as mediating variables. On the other hand, the condition of the Sandaran Website indicates that the level of customer loyalty has not yet reached the company's target, reflected in the low percentage of repeat orders. The difference in the results of previous research and the empirical conditions indicates a research gap that requires further study. Therefore, this study was conducted to analyze the effect of service quality on customer loyalty by considering the mediating role of customer satisfaction on the Sandaran Website. This research is expected to contribute to clarifying the relationship between variables in the digital service industry and generate recommendations that can be used by companies to increase customer loyalty.

2. Research Methods

This research is a comparative causal study. Causal research aims to determine the influence between two or more variables. The analytical approach used in this study is a quantitative approach. Quantitative research involves obtaining numerical data and using analytical methods to calculate the data obtained. (Sumardika and Suwandana 2019)In other words, the purpose of this research is to find the influence of service quality on customer loyalty with perceived value and customer satisfaction as mediating variables. The data in this study are needed to answer the research problem formulation. Data collection in this study used a questionnaire distributed and completed by respondents who met the criteria. In this study, data was obtained by submitting statements for each research variable. The questionnaire was completed directly by respondents via the Google Forms platform. Furthermore, in this filling technique, respondents chose numbers 1-5, ranging from disagree to strongly agree, commonly referred to as a Likert scale. The purpose of using this scale is to observe and obtain accurate data on how strongly respondents agree with the statements contained in the questionnaire in a study.(Supérieure and Widayanti 2021)**.** The data analysis technique in this study uses Structural Equation Modeling (SEM) based on Partial Least Squares (PLS-SEM) with

the help of SmartPLS software version 4.0. PLS-SEM analysis consists of two stages, namely evaluation of the measurement model (outer model) and evaluation of the structural model (inner model).

3. Results and Discussion

3.1. Description of Research Object

This section presents the results of primary data processing obtained from 200 respondents who are customers of the Sandaran Website. Data were collected through a Likert-scale questionnaire distributed online using a questionnaire link to Sandaran Website customers via the Google Forms platform. The sampling technique used was non-probability sampling with purposive sampling. Furthermore, the collected data were analyzed using the Structural Equation Modeling – Partial Least Square (SEM-PLS) approach.

1) Respondent Characteristics

This study aims to analyze the influence of service quality on customer loyalty of Sandaran website customers, with customer satisfaction as a mediating variable, so that a description of respondents is needed to describe the characteristics of respondents including age, gender, residence, education, occupation, and frequency of use of Sandaran services to support the general description of respondents and their perceptions of the variables studied, with the results as follows:

a. Respondent Characteristics Age

Table Respondent Age

No	Information	Number of Respondents	Percentage (%)
1	< 20	1	0.5
2	20–30	85	42.5
3	31–40	81	40.5
4	> 40	33	16.5
Total		**200**	**100**

Source: Primary data, processed (2026)

Based on Table 4.1, of the 200 respondents who are customers of the Sandaran website, the majority are in the 20–30 year age range, amounting to 85 people (42.5%), followed by respondents aged 31–40 years, amounting to 81 people (40.5%). Respondents aged over 40 years were recorded at 33 people (16.5%), while respondents aged under 20 years were the smallest group, namely only 1 person (0.5%). This indicates that the majority of Sandaran website customers are of productive age.

b. Respondent Characteristics Gender

Table Respondent Gender

No	Information	Number of Respondents	Percentage (%)
1	Man	129	64.5
2	Woman	71	35.5

Total	**200**	**100**

Source: Primary data, processed (2026)

Based on table in terms of gender, Sandaran website customers are dominated by male respondents amounting to 129 people (64.5%), while female respondents amounted to 71 people (35.5%).

c. Respondent Characteristics of Residence

Table Respondents' Place of Residence

No	Information	Number of Respondents	Percentage (%)
1	Semarang	99	49.5
2	Solo/Surakarta	32	16
3	Magelang	26	13
4	Pekalongan	20	10
5	Tegal	16	8
6	Salatiga	7	3.5
Total		**200**	**100**

Source: Primary data, processed (2026)

Based on Table, the majority of Sandaran website customers reside in Semarang, amounting to 99 people (49.5%). The rest are spread across Solo/Surakarta (32 people (16%), Magelang (26 people (13%), Pekalongan (20 people (10%), Tegal (16%), and Salatiga (7 people (3.5%).

d. Characteristics of Educational Respondents

Table Respondent Education

No	Information	Number of Respondents	Percentage (%)
1	High school/equivalent	8	4
2	Diploma	24	12
3	Bachelor	153	76.5
4	Master	15	7.5
Total		**200**	**100**

Source: Primary data, processed (2026)

Based on Table 4.4, in terms of education level, the majority of Sandaran website customers have a bachelor's degree, namely 153 people (76.5%). The remaining 24 people have a diploma (12%), 15 people have a master's degree (7.5%), and 8 people have a high school or equivalent (4%).

e. Respondents' Job Characteristics

Table Respondents' Occupation

No	Information	Number of Respondents	Percentage (%)
1	Students	4	2
2	MSMEs	27	13.5
3	Company	39	19.5
4	Non-Profit/Community	130	65
Total		**200**	**100**

Source: Primary data, processed (2026)

Based on table type of work/business/profession, Sandaran website customers are dominated by the Non-Profit/Community group, namely 130 people (65%). This is followed by respondents working in the Corporate sector as many as 39 people (19.5%), MSMEs as many as 27 people (13.5%), and Students as many as 4 people (2%).

f. Respondent Characteristics Frequency of Service Use

Table Respondents' Frequency of Service Use

No	Information	Number of Respondents	Percentage (%)
1	< 2	28	14
2	2–5	84	42
3	> 5	88	44
Total		**200**	**100**

Source: Primary data, processed (2026)

Based on Table, the frequency of use of the Sandaran website in the last three months, the majority of customers used the service more than 5 times, namely 88 people (44%). Respondents with a frequency of use 2–5 times numbered 84 people (42%), while respondents with a frequency of less than 2 times numbered 28 people (14%).

2) Descriptive Analysis of Variables

The primary data in this study were obtained from respondents' responses through a questionnaire distributed using the Google Forms platform. The questionnaire was structured based on a Likert scale with a score range of 1 to 5, where a score of 5 is the highest score, indicating a response of "strongly agree," while a score of 1 is the lowest, indicating a response of "strongly disagree." To obtain a general overview of respondents' responses to each variable, the average value (mean) was used, which was then grouped into several interval categories using the following formula:

$$\text{IK} \frac{STt - STr}{JK}$$

$$\text{IK} \frac{5-1}{5} = 0{,}8$$

Based on these calculations, a class interval of 0.8 was obtained, which was then used as a reference in compiling assessment categories for the average respondent's answers, as shown in table.

Table Variable Class Intervals

Class Interval	Category	Weight of Value
1.00 – 1.80	Very Low	1
1.81 – 2.60	Low	2
2.61 – 3.40	Enough	3
3.41 – 4.20	Tall	4
4.21 – 5.00	Very high	5

Source: Primary data, processed (2026)

3.2. Research Results

1) Data Instrument Test

The data instrument used in this study was to test the validity and reliability values of 200 respondents who used the Sandaran website service. Data analysis used SmartPLS 4.0 software.

a. Partial Least Square (PLS) Model Scheme

Hypothesis testing in this study was conducted using the Partial Least Squares (PLS) analysis technique through the SmartPLS 4.0 program. The PLS model scheme proposed in this study is presented as follows:

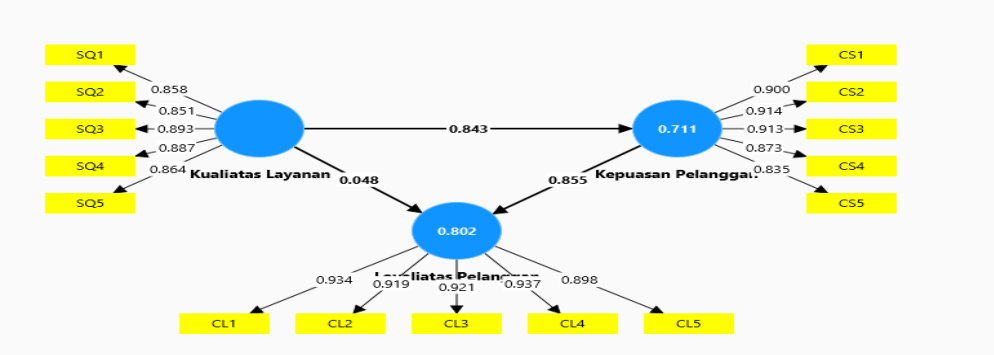


Figure Outer Model

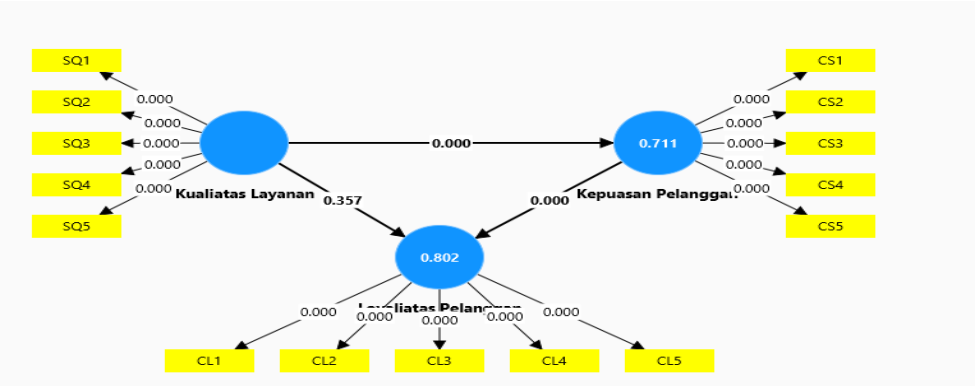


Figure Inner Model

b. Outer Model

Measurement model testing (outer model) aims to determine the extent to which a research model has adequate validity and reliability. This testing involves four stages: Convergent Validity, Discriminant Validity, Composite Reliability, and Cronbach's Alpha.

2) Convergent Validity Test

An indicator is declared valid in convergent validity testing if it meets the criteria of an outer loading value > 0.7. The results of the outer loading value test for each indicator from each research variable are shown in the following table.

Table Convergent Validity Test Results

Variables	Indicator	Outer Loading (O)	Sample Mean (M)	STDEV	T Statistics	P Value	Information
Quality of Service	SQ1	0.858	0.857	0.026	32,838	0,000	Valid
Quality of Service	SQ2	0.851	0.849	0.035	24,610	0,000	Valid
Quality of Service	SQ3	0.893	0.893	0.018	49,368	0,000	Valid
Quality of Service	SQ4	0.887	0.887	0.021	41,875	0,000	Valid
Quality of Service	SQ5	0.864	0.864	0.024	35,539	0,000	Valid
Customer satisfaction	CS1	0.900	0.900	0.023	39,733	0,000	Valid
Customer satisfaction	CS2	0.914	0.914	0.021	43,518	0,000	Valid
Customer satisfaction	CS3	0.913	0.912	0.018	50,414	0,000	Valid
Customer satisfaction	CS4	0.873	0.873	0.027	32,925	0,000	Valid
Customer satisfaction	CS5	0.835	0.836	0.029	28,577	0,000	Valid
Customer Loyalty	CL1	0.934	0.934	0.015	61,054	0,000	Valid
Customer Loyalty	CL2	0.919	0.918	0.021	43,876	0,000	Valid
Customer Loyalty	CL3	0.921	0.921	0.019	48,420	0,000	Valid
Customer Loyalty	CL4	0.937	0.937	0.014	66,599	0,000	Valid
Customer Loyalty	CL5	0.898	0.897	0.024	37,202	0,000	Valid

Source: Processed data, 2026

Convergent validity testing was conducted using SmartPLS 4.0, with the results presented in Table All indicators had outer loading values above 0.7, T-statistic values above 1.96, and p-values of 0.000 ($p < 0.001$). These results indicate that all indicators met convergent validity criteria and were significantly related to the constructs they measured.

a. Quality of Service. The outer loading values ranged from 0.851 (SQ2) to 0.893 (SQ3), with standard deviations of 0.018 to 0.035 and T-statistics of 24.610 to 49.368. All indicators were significant at $p < 0.001$, thus declared valid in measuring Service Quality.

b. Customer satisfaction. The outer loading values ranged from 0.835 (CS5) to 0.914 (CS2), with standard deviations of 0.018 to 0.029 and T-statistics of 28.577 to 50.414. All indicators were significant at $p < 0.001$, thus declared valid in measuring Customer Satisfaction.

c. Customer Loyalty. The outer loading values ranged from 0.898 (CL5) to 0.937 (CL4), with standard deviations of 0.014 to 0.024 and T-statistics of 37.202 to 66.599. All indicators were significant at $p < 0.001$, thus declared valid in measuring Customer Loyalty.

Based on these results, no indicators need to be removed because all meet the criteria of outer loading > 0.7, T-statistic > 1.96, and p-value < 0.05. Thus, all indicators are suitable for use in further analysis.

3) Discriminant Validity Test

An indicator is declared valid in discriminant validity testing if its Average Variance Extracted (AVE) value is greater than 0.5. To determine whether this criterion is met, the results of the discriminant validity test based on the AVE value of each variable in this study are presented in Table.

Table Discriminant Validity Test Results

Variables	*Average variance extracted (AVE)*	Information
Customer satisfaction	0.788	Valid
Quality of Service	0.758	Valid
Customer Loyalty	0.850	Valid

Source: Processed data, 2026.

Based on Table, it can be seen that all variables in this study have an Average Variance Extracted (AVE) value above 0.50, thus it can be stated that they have met the convergent validity criteria. The Customer Satisfaction variable obtained an AVE value of 0.788, which indicates that the indicators in this variable are able to explain the construct well. The Service Quality variable has an AVE value of 0.758, which is also above the required threshold and indicates an adequate level of convergent validity. Meanwhile, the Customer Loyalty variable recorded the highest AVE value among the three variables, namely 0.850, which indicates that the indicators in this variable have the greatest contribution in explaining the construct.

4) Reliability Test (Compositive Reliability)

The reliability of a construct can be assessed using two indicators: Cronbach's Alpha and Composite Reliability. A construct is considered reliable if the value of both indicators is > 0.70.

Table Reliability Test Results

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)
Customer satisfaction	0.932	0.933	0.949
Quality of service	0.920	0.923	0.940
Customer Loyalty	0.956	0.956	0.966

Source: PLS Output, 2026

Based on Table, it can be seen that the Cronbach's Alpha value for each variable is above 0.7. The Customer Satisfaction variable obtained a value of 0.932, the Service Quality variable was 0.920, and the Customer Loyalty variable was 0.956. Likewise, the Composite Reliability (rho_c) value for each variable was also above 0.7, namely 0.949 for the Customer Satisfaction variable, 0.940 for the Service Quality variable, and 0.966 for the Customer Loyalty variable. Thus, all constructs in this study can be declared reliable.

3.3. Hypothesis Testing

In this study, there are two types of hypotheses tested, namely hypotheses that test direct influences and hypotheses that test indirect influences through mediating variables.

1) Direct Effect Testing

The direct effect test in this study was conducted using a bootstrapping procedure, with the test criteria being a t-statistic value greater than 1.96 and a p-value less than 0.05 (5%). The results of the path coefficient test in this study are presented in Table 4.18.

Table Path Coefficients Test Results

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
Customer Satisfaction -> Customer Loyalty	0.855	0.860	0.121	7,071	0.000
Service Quality -> Customer Satisfaction	0.843	0.846	0.030	27,876	0.000
Quality of Service -> Customer Loyalty	0.048	0.042	0.131	0.366	0.357

Source: Data by, 2026

First Hypothesis

H1: Service quality has a significant effect on customer satisfaction. It can be seen in table 4.18 that the relationship between service quality and customer satisfaction has a path coefficient value of 0.843, this value is positive, which means there is a positive relationship between service quality and customer satisfaction. Furthermore, it can be seen that the relationship between service quality and customer satisfaction has a t-statistic value of 27.876, this value is > 1.96 and has a p-value of 0.000 < 0.05, which means that the relationship between service quality and customer satisfaction variables is significant. Based on the results of the study and the explanation, it can be concluded that the first hypothesis in this study is accepted.

Second Hypothesis

H2: Service quality has a significant effect on customer loyalty. It can be seen in table 4.18 that the relationship between service quality and customer loyalty has a path coefficient value of 0.048, this value is positive but very small, which means there is a positive relationship between service quality and customer loyalty even though the effect is weak. Furthermore, it can be seen that the relationship between service quality and customer loyalty has a t-statistic value of 0.366, this value is <1.96 and has a p-value of 0.357> 0.05 which means that the relationship between service quality variables and customer loyalty is not significantly influential. Based on the results of the study and the explanation, it can be concluded that the second hypothesis in this study is rejected.

Third Hypothesis

H3: Customer Satisfaction has a significant effect on Customer Loyalty. It can be seen in table 4.18 that the relationship between customer satisfaction and customer loyalty has a path coefficient value of 0.855, this value is positive which means there is a positive relationship between customer satisfaction and customer loyalty. Furthermore, it can be seen that the relationship between customer satisfaction and customer loyalty has a t-statistic value of 7.071, this value is > 1.96 and has a p-value of 0.000 < 0.05 which means that the relationship between customer satisfaction and customer loyalty variables is significant. Based on the results of the study and the explanation, it can be concluded that the third hypothesis in this study is accepted.

2) Indirect Effect Testing

An indirect effect test was conducted to determine whether the Service Quality variable indirectly influences Customer Loyalty through the mediator variable, namely Customer Satisfaction. The criteria used in this test were if the p-value <0.05 (5%) and the t-statistics value >1.96, then the indirect effect is declared significant. The results of this test analysis were obtained through the bootstrapping technique in the specific indirect effect menu, as presented in Table.

Table Results of the Specific Indirect Effect Test

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
Service Quality -> Customer Satisfaction -> Customer Loyalty	0.721	0.728	0.113	6,380	0.000

Source: Processed data, 2026

Based on Table, it can be seen that the indirect relationship between Service Quality and Customer Loyalty through Customer Satisfaction has an original sample value (coefficient) of 0.721, which is positive. This indicates that the indirect effect of Service Quality on Customer Loyalty through Customer Satisfaction is unidirectional and quite strong. Furthermore, this relationship has a t-statistic value of 6.380, which means the value is greater than 1.96, and has a p-value of 0.000, which means it is less than 0.05. Thus, it can be concluded that Service Quality has an indirect and significant effect on Customer Loyalty through Customer Satisfaction as a mediator variable.

This finding corroborates the results of previous tests, where the direct effect of Service Quality on Customer Loyalty was insignificant (H2 was rejected), while its indirect effect through Customer Satisfaction was proven significant. This indicates that Customer Satisfaction acts as a full mediator in explaining the relationship between Service Quality and Customer Loyalty in this study.

3) Interpretation of Research Results and Discussion

After conducting data testing and analysis, this section discusses the research results by linking them to relevant theories and previous research results.

a. The Influence of Service Quality on Customer Satisfaction

Based on the test results above, the research results show that the first hypothesis in this study, which states that service quality has an effect on customer satisfaction with a significant value in table 4.178 of 0.000 <0.05 and a t-statistic value of 27.876 > 1.96, is accepted. The path coefficient value of 0.843 indicates that the direction of the influence is positive and is classified as very strong. The results of this study are supported by empirical evidence from research conducted by Aslam et al (2018), Miranda (2018), and Zaimah et al (2022).

These findings are relevant to the context of Sandaran Website customers, where responsive, reliable, and expected service quality has been shown to increase customer satisfaction. Conversely, if perceived service quality is low, customers are likely to evaluate their experience negatively, ultimately lowering their satisfaction levels. Therefore, service quality is an aspect that needs to be continuously maintained and improved by Sandaran Website managers, given its significant role in shaping customer satisfaction.

b. The Influence of Service Quality Has a Significant Influence on Customer Loyalty

Based on the test results, the second hypothesis in this study, which states that service quality influences customer loyalty, with a significance value in Table 4.18 of 0.357 > 0.05 and a t-statistic value of 0.366 < 1.96, the hypothesis is rejected. The path coefficient value of 0.048 also indicates that although the direction of the influence is positive, the strength of the direct influence is very weak and not statistically significant.

These differences in results indicate that good service quality alone does not automatically lead to loyalty among Sandaran Website customers. Customers appear to require a further evaluation stage, namely the development of satisfaction before ultimately developing into loyalty. In other words, customer loyalty to Sandaran Website is formed more as a result of satisfied customers, rather than as a direct impact of service quality itself. This finding implies that improving service quality needs to be accompanied by strategies to maintain customer satisfaction to optimally foster loyalty.

c. The Influence of Customer Satisfaction on Customer Loyalty

Based on the test results, the third hypothesis in this study, which states that customer satisfaction influences customer loyalty, with a significance value in Table 4.18 of 0.000 < 0.05 and a t-statistic value of 7.071 > 1.96, is accepted. The path coefficient value of 0.855 indicates that the influence is positive and is classified as very strong. The results of this study are

supported by empirical evidence from research conducted by Hoe and Mansori (2018) and Qayyum et al. (2013).

These results confirm that customer satisfaction is a key determinant of customer loyalty on the Sandaran website. Customers who are satisfied with the service they receive are more likely to demonstrate a commitment to continue using the service in the future, recommend it to others, and be reluctant to switch to other service providers. Therefore, maintaining and improving customer satisfaction should be a strategic priority for Sandaran website managers in an effort to maintain long-term customer loyalty.

d. The Influence of Service Quality on Customer Loyalty through Customer Satisfaction as a Mediating Variable

Based on the results of the indirect effect test, the fourth hypothesis in this study, which states that service quality influences customer loyalty through customer satisfaction as a mediating variable, with a significance value in Table 4.19 of 0.000 < 0.05 and a t-statistic value of 6.380 > 1.96, the hypothesis is accepted. The indirect path coefficient value of 0.721 indicates that the mediating effect is positive and relatively strong. The results of this study are supported by empirical evidence from research conducted by Hoe and Mansori (2018) and Jahmani et al. (2020), which is also supported by Slack and Singh (2020).

4. Conclusion

Based on the results of the analysis and discussion that have been described in Chapter IV regarding the influence of service quality on customer loyalty with customer satisfaction as a mediating variable for Sandaran website customers, the following conclusions can be drawn: Service Quality has a positive and significant effect on Customer Satisfaction among Sandaran website customers, with a path coefficient of 0.843, a t-statistic of 27.876 (> 1.96), and a p-value of 0.000 (< 0.05). Thus, the first hypothesis (H1) in this study is accepted. Service quality does not have a direct significant effect on customer loyalty among Sandaran website customers, with a path coefficient of 0.048, a t-statistic of 0.366 (<1.96), and a p-value of 0.357 (>0.05). Thus, the second hypothesis (H2) in this study is rejected. Customer satisfaction has a positive and significant effect on customer loyalty among Sandaran website customers, with a path coefficient of 0.855, a t-statistic of 7.071 (> 1.96), and a p-value of 0.000 (< 0.05). Thus, the third hypothesis (H3) in this study is accepted. Service Quality has a positive and significant effect on Customer Loyalty indirectly through Customer Satisfaction as a mediating variable, with an indirect coefficient value of 0.721, a t-statistic of 6.380 (> 1.96), and a p-value of 0.000 (< 0.05). Thus, the fourth hypothesis (H4) in this study is accepted. Considering that the direct effect of Service Quality on Customer Loyalty is insignificant (H2 is rejected) while its indirect effect is significant, Customer Satisfaction is proven to act as a full mediation variable in the relationship between Service Quality and Customer Loyalty.

5. References

Afrida, Resi, Syahmardi Yacob, and Novita Sari. 2020. "Membangun Loyalitas Pelanggan Melalui Kualitas Produk Dan Citra Merek (Studi Pada Pelanggan Oppo Jambi)." *Jurnal Dinamika Manajemen* 8(1): 7–16. doi:10.22437/jdm.v8i1.16829.

Anzahri, Farezy Al, Naili Farida, Hari Susanta Nugraha, Departemen Administrasi Bisnis, and Universitas Diponegoro. 2025. "PENGARUH E-SERVICE QUALITY DAN E-CUSTOMER EXPERIENCE TERHADAP E-CUSTOMER LOYALTY MELALUI PERCEIVED VALUE SEBAGAI VARIABEL INTERVENING (STUDI PADA PENGGUNA APLIKASI TIKET . COM DI KOTA SEMARANG) Pendahuluan." 14(2): 791–802.

Ardiansyah, Risnita, and M. Syahran Jailani. 2023. "Teknik Pengumpulan Data Dan Instrumen Penelitian Ilmiah Pendidikan Pada Pendekatan Kualitatif Dan Kuantitatif." *Jurnal IHSAN : Jurnal Pendidikan Islam* 1(2): 1–9. doi:10.61104/ihsan.v1i2.57.

Aslam, Wajeeha, Imtiaz Arif, Kashif Farhat, and Marium Khursheed. 2018. "The Role of Customer Trust, Service Quality and Value Dimensions in Determining Satisfaction and Loyalty: An Empirical Study of Mobile Telecommunication Industry in Pakistan." *Market-Trziste* 30(2): 177–94. doi:10.22598/mt/2018.30.2.177.

Azad, Naser, and Mohammad Sadeghifar. 2019. "The Effect of Service Quality on Customer Loyalty, given the Mediating Role of Customer Engagement and Perceived Value (Case Study: Taban Airline, Mashhad, Iran)." *International Journal of Business Innovation and Research* 20(1): 129–44. doi:10.1504/IJBIR.2019.101693.

Education, Elementary, Popy Nur Elisa, and Universitas Buana Perjuangan. 2021. "Jurnal Basicedu." 5(1): 446–52.

Hoe, Ling Chen, and Shaheen Mansori. 2018. "The Effects of Product Quality on Customer Satisfaction and Loyalty: Evidence from Malaysian Engineering Industry." *International Journal of Industrial Marketing* 3(1): 20. doi:10.5296/ijim.v3i1.13959.

Indrasari, Dr. Meithiana. 2019. *PEMASARAN DAN KEPUASAN PELANGGAN*. http://repository.unitomo.ac.id/2773/1/PEMASARAN DAN KEPUASAN PELANGGAN.pdf.

Izogo, Ernest Emeka, and Ike Elechi Ogba. 2015. "Service Quality, Customer Satisfaction and Loyalty in Automobile Repair Services Sector." *International Journal of Quality and Reliability Management* 32(3): 250–69. doi:10.1108/IJQRM-05-2013-0075.

Jahmani, Ashraf, Islam Bourini, and Omar A. Jawabreh. 2020. "The Relationship between Service Quality, Client Satisfaction, Perceived Value and Client Loyalty: A Case Study of Fly Emirates." *Cuadernos de Turismo* (45): 219–38. doi:10.6018/turismo.426101.

Jiang, Ling, Minjoon Jun, and Zhilin Yang. 2016. "Customer-Perceived Value and Loyalty: How Do Key Service Quality Dimensions Matter in the Context of B2C e-Commerce?" *Service Business* 10(2): 301–17. doi:10.1007/s11628-015-0269-y.

Joseph F. Hair, G. Tomas M. Hult, Christian M. Ringle, Marko Sarstedt. 2022. *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*. 3rd, berilus ed. Thousand Oaks, California: SAGE Publications, Incorporated.

Joseph F. Hair, Jeffrey J. Risher, Marko Sarstedt, dan Christian M. Ringle. 2019. "No Title."

When to Use and How to Report the Results of PLS-SEM,European Business Review 31(1): 2–24. https://doi.org/10.1108/EBR-11-2018-0203.

Khairunnisa, Khairunnisa, Fenty Fitrian Sari, Mega Anggelena, Deka Agustina, and Euis Nursa'adah. 2022. "Penggunaan Effect Size Sebagai Mediasi Dalam Koreksi Efek Suatu Penelitian." *Jurnal Pendidikan Matematika (Judika Education)* 5(2): 138–51. doi:10.31539/judika.v5i2.4802.

Kotler, Philip, Keller, Manceau, and Aurélie Hemonnet-Goujot. 2015. 83 Décisions Marketing *Marketing Management 15th*.

Liu, Chung Tzer, Yi Maggie Guo, and Chia Hui Lee. 2011. "The Effects of Relationship Quality and Switching Barriers on Customer Loyalty." *International Journal of Information Management* 31(1): 71–79. doi:10.1016/j.ijinfomgt.2010.05.008.

M, Hasfar, Theresia Militina, and Gusti Norlitaria Achmad. 2020. "Effect of Customer Value and Customer Experience on Customer Satisfaction and Loyalty Pt Meratus Samarinda." *International Journal of Economics, Business and Accounting Research (IJEBAR)* 4(01): 84–94. doi:10.29040/ijebar.v4i01.909.

Manajemen, Jurnal, Abdus Salam, Usaha Mikro, and Kota Banda. 2024. "Transformasi Digital UMKM Indonesia Di Era Industri 5 . 0 : Studi Kasus Di Kota Banda Aceh Abstrak." 1(1): 1–10.

Marie, Ask Ann. 2024. 58 Journal of Clinical Orthodontics *Management & Marketing*.

Miranda, Sandra, Patrícia Tavares, and Rita Queiró. 2018. "Perceived Service Quality and Customer Satisfaction: A Fuzzy Set QCA Approach in the Railway Sector." *Journal of Business Research* 89(December): 371–77. doi:10.1016/j.jbusres.2017.12.040.

Mohsan, Faizan, Muhammad Musarrat Nawaz, M. Sarfraz Khan, Zeeshan Shaukat, and Numan Aslam. 2011. "Impact of Customer Satisfaction on Customer Loyalty and Intentions to Switch : Evidence from Banking Sector of Pakistan." *International Journal of Business and Social Science* 2(16): 263–70.

Morgeson, Forrest V, G Tomas M Hult, and Udit Sharma. 2023. "The American Customer Satisfaction Index (ACSI): A Sample Dataset and Description." *Data in Brief* 48: 109123. doi:10.1016/j.dib.2023.109123.

Nurhalizah, Siti, Gusmi Kholijah, and Z Gusmanely. 2024. "Analisis Structural Equation Modeling Partial Least Square Pada Kinerja Pegawai PT. Bank Pembangunan Daerah Jambi." *Indonesian Journal of Applied Statistics* 6(2): 125. doi:10.13057/ijas.v6i2.78921.

Pamungkas, Gufa Bagus, and Heru Sulistyo. 2020. "Peran Organizational Justice Dan Spiritual Management Terhadap Employee Engagement Dan Turnover Intention Dengan Dimoderasi Locus of Control." *JBTI : Jurnal Bisnis Teori dan Implementasi* 11(2). doi:10.18196/bti.112138.