




The Effect of Service Quality on Patient Loyalty with Satisfaction as An Intervening Variable

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Received : January 7, 2026

Revised : April 13, 2026

Accepted : April 16, 2026

Online : June 30, 2026

Abstract

Healthcare institutions operating in resource-constrained rural settings face distinct challenges in building durable patient relationships, particularly when serving predominantly public insurance beneficiaries. This study aims to examine the direct and indirect effects of service quality on patient loyalty through patient satisfaction as a mediator, focusing on the national health insurance scheme (BPJS) outpatients at a private rural hospital in Brebes, Indonesia. A descriptive-verification approach with quantitative methods was employed, drawing on purposive sampling to recruit 374 eligible outpatients who had attended the facility on at least two separate occasions. Structured questionnaires served as the primary data collection instrument, and path analysis was applied to examine both direct and mediated relationships among the three constructs. The findings reveal that service quality significantly impacts patient satisfaction (path coefficient = 0.837, $p < 0.05$) and patient loyalty (path coefficient = 0.693, $p < 0.05$). Satisfaction additionally influences loyalty (path coefficient = 0.178, $p < 0.05$) and acts as a partial mediator. These results suggest that service quality serves as a primary driver for institutional sustainability in rural healthcare networks. Management should prioritize empathetic and responsive service to secure patient commitment within insurance-based systems. This study provides a specific framework for improving patient retention in underserved healthcare sectors.

Keywords: *Service Quality, Patient Loyalty, Patient Satisfaction, BPJS, Rural Hospital, Path Analysis*

INTRODUCTION

Private hospitals operating in rural regions encounter structural challenges that fundamentally distinguish them from their urban counterparts, particularly in managing the tension between constrained financial resources and rising patient service expectations. In Indonesia, the expansion of the national health insurance program (BPJS) has altered the healthcare landscape. Reimbursement mechanisms impose strict fiscal ceilings while patient volumes surge, compelling hospital management to optimize service delivery within tightened budgetary boundaries. This issue is critical for hospital sustainability, as failure to maintain service quality amidst high patient volumes can lead to diminished patient trust and long-term financial instability in competitive rural markets (Guinness et al., 2022).

Allam Medica Bumiayu General Hospital exemplifies this predicament. Located in the southern district of Brebes Regency, West Java, the facility serves a predominantly rural population, with an estimated 85–90% of its outpatient base comprising BPJS beneficiaries. Recorded outpatient visits expanded by a factor of 15 to 36 between 2016 and 2024. However, this growth reflects a captive-market dynamic shaped by limited access to alternative services rather than genuine behavioral loyalty (Guinness et al., 2022). This distinction is clinically and managerially significant: volume growth driven by necessity rather than preference does not guarantee the affective and relational dimensions of genuine patient loyalty (Rahmawaty et al., 2021). This hospital serves as a meaningful case representing broader rural service challenges, where geographic monopolies often mask underlying service delivery weaknesses.



Service quality in the healthcare domain is conceptualized as the degree to which delivered care aligns with or surpasses the expectations held by patients prior to receiving that care. The SERVQUAL model, which decomposes service quality into five empirically grounded dimensions—tangibles, reliability, responsiveness, assurance, and empathy—has remained the predominant instrument for measuring patient perceptions across diverse healthcare environments (Parasuraman et al., 1988). Within hospital contexts specifically, these dimensions extend beyond procedural standards to encompass interpersonal exchanges between patients and clinical personnel, the clarity of medical communication, and the perceived competence of healthcare providers (Alrubaiee & Alkaa'ida, 2011).

Evidence accumulated over the past decade consistently affirms that patient evaluations of service quality substantially govern behavioral outcomes, including the intention to revisit and the propensity to recommend an institution to others (Priporas et al., 2017). Furthermore, scholars argue that in healthcare environments where patients are often physically and emotionally vulnerable, consistent service quality generates a sense of institutional trust that is foundational to long-term relational bonds (Amin & Nasharuddin, 2011).

Patient satisfaction is understood as the subjective cognitive and affective appraisal that emerges when a patient compares the service actually received against pre-existing expectations (Oliver, 1980). This evaluative process encompasses technical dimensions such as diagnostic accuracy and treatment effectiveness, as well as relational dimensions including staff attentiveness, clarity of information provision, and environmental comfort (Priporas et al., 2017). Theoretical grounding for this mechanism is provided by Expectation Confirmation Theory, which posits that satisfaction arises when perceived service performance confirms or surpasses prior expectations, thereby reinforcing continued engagement with the same provider (Bhattacharjee, 2001).

In the healthcare context, satisfied patients exhibit a constellation of favorable behaviors, including higher treatment adherence, greater willingness to recommend the facility, and reduced susceptibility to competitor switching, making satisfaction a strategically pivotal construct for institutional sustainability (Alrubaiee & Alkaa'ida, 2011). Research conducted across multiple health systems corroborates that satisfaction functions as a central mediator linking service quality perceptions to loyalty behavior, rather than service quality exerting its influence on loyalty exclusively through a direct pathway (Alhassan, 2021; Andreano & Pardede, 2023).

Patient loyalty is defined as the sustained behavioral and attitudinal disposition of patients to repeatedly utilize the services of a given healthcare institution and to actively advocate for that institution within their social networks. Unlike simple repeat visitation, genuine loyalty encompasses both a behavioral component reflected in actual return visits and an affective component characterized by emotional attachment and institutional trust.

The Service-Profit Chain framework theorizes that elevated service quality drives employee-mediated satisfaction, which cascades into patient satisfaction and culminates in loyal behavior, illustrating the interconnected nature of service inputs and relational outputs (Heskett & Schlesinger, 1994). Empirical support for this model has been documented across diverse healthcare settings. Investigations in Taiwan identified staff competence and administrative efficiency as primary predictors of satisfaction-driven loyalty (Wu, 2018), while studies conducted in Indonesian private hospitals underscored the roles of reliability and empathy as dominant dimensions influencing both satisfaction and subsequent loyalty formation (Sulistyo & Hermawan, 2020).

In rural hospital settings, the construct of loyalty carries particular nuance: patients with constrained access to alternative providers may exhibit behaviorally loyal patterns without the corresponding affective attachment, necessitating that management distinguish between loyalty rooted in preference and loyalty attributable to the absence of viable alternatives (Misra et al.,

2023).

Prior investigations in rural healthcare reveal that empathy and accessibility often outweigh physical infrastructure in determining satisfaction, departing from urban patterns (Wu, 2018). Recent studies from comparable healthcare systems have consistently affirmed the linkages among service quality, satisfaction, and loyalty. Studies conducted in Taiwan found that hospital service quality directly influences patient trust and loyalty among elderly chronic disease patients, with satisfaction playing a significant mediating role (Shie et al., 2022). Service quality dimensions, particularly empathy and reliability, drive patient satisfaction, which subsequently enhances loyalty in Turkish public hospitals (Andreano & Pardede, 2023). Research at a private hospital near Jakarta documented that service quality and brand image jointly influence customer satisfaction and loyalty (Katoni & Sijabat, 2023).

Despite these contributions, empirically validated evidence specifically addressing the mediating role of satisfaction within BPJS-dominated rural hospital contexts remains sparse, constituting a meaningful gap in the existing literature.

Despite these theoretical and empirical contributions, a meaningful gap remains in the extant literature. Empirically validated evidence specifically addressing the mediating role of patient satisfaction within BPJS-dominated rural hospital contexts remains sparse. The present study addresses this gap by providing rural hospital managers with actionable insights into which service dimensions most effectively drive loyalty within the BPJS framework.

Conceptually, this study refines the service quality–satisfaction–loyalty model by testing its validity in a resource-constrained, high-volume environment. Drawing upon the theoretical and empirical foundations outlined above, the following hypotheses are advanced: (H1) service quality exerts a significant positive direct effect on patient loyalty; (H2) service quality exerts a significant positive direct effect on patient satisfaction; (H3) patient satisfaction exerts a significant positive direct effect on patient loyalty; and (H4) patient satisfaction significantly mediates the relationship between service quality and patient loyalty.

This study therefore aims to: (1) examine the direct influence of service quality on patient loyalty; (2) assess the direct effect of service quality on patient satisfaction; (3) evaluate the direct effect of patient satisfaction on patient loyalty; and (4) analyze whether patient satisfaction mediates the relationship between service quality and patient loyalty among BPJS outpatients at Allam Medica Bumiayu General Hospital. These objectives collectively form the study's problem focus and structural research model

RESEARCH METHOD

This study employs an applied, explanatory quantitative design to test causal relationships between service quality, satisfaction, and loyalty in a healthcare service setting, where a rural hospital setting serves BPJS outpatients predominantly. The target population comprised all BPJS beneficiaries who had attended Allam Medica Bumiayu General Hospital outpatient clinics on at least two separate occasions within a single calendar year. Based on internal hospital records from 2020 to 2024, a cumulative total of 224,430 patient visits were documented, with an annual average of approximately 3,741 visits. The sample size was determined using Slovin's formula with a 5% margin of error, based on an annual average of approximately 3,741 unique patients. Slovin's formula is expressed as:

$$n = N / (1 + N \cdot e^2)$$

Where n represents the sample size, N represents the population size, and e represents the margin of error. Applying the formula:

$$n = 3,741 / (1 + 3,741 \times 0.05^2) = 361.4, \text{ which rounds to 361 respondents.}$$

To account for potential non-response or incomplete questionnaires, the sample was increased by approximately 3.6% to 374 respondents. The 224,430 figure recorded in hospital archives refers to total visit frequency rather than unique individuals; therefore, the sampling logic targets the unique patient base to ensure independent observations. Purposive sampling yielded

374 respondents distributed across outpatient units. Data collection followed a structured sequence: (1) participant identification based on inclusion criteria; (2) questionnaire administration by research assistants post-consultation; (3) data screening for completeness; (4) validity and reliability testing, and (5) path analysis execution.

Instrumentation

Research assistants stationed at each clinic distributed structured, self-administered questionnaires to eligible patients after their medical consultations. The questionnaire comprised three measurement domains adapted from prior validated studies, each measured on a four-point Likert scale (1 = strongly disagree, 4 = strongly agree) to avoid neutral responses and accommodate respondents with limited formal education: service quality (15 items) operationalized using the five SERVQUAL dimensions (tangibles, reliability, responsiveness, assurance, and empathy) (Alrubaiee & Alkaa'ida, 2011; Parasuraman et al., 1988); patient satisfaction consisting of 5 items (Oliver, 1980); and patient loyalty consisting of 5 items (Griffin & Mahon, 1997). These formats are appropriate for the BPJS outpatient setting as they focus on perceived value and recurring interaction.

Validity and Reliability

The instrument was pilot-tested on 30 outpatients who met the inclusion criteria but were not included in the final sample. Construct validity was assessed using item-total correlation with a threshold of 0.30, and all items met this criterion. Reliability was evaluated using Cronbach's alpha, which yielded values of 0.89 for service quality, 0.86 for patient satisfaction, and 0.88 for patient loyalty, all exceeding the acceptable threshold of 0.70.

Data Analysis

Before the main analysis, the data were screened for missing values and outliers. Classical assumption tests were conducted to ensure the robustness of the model, including normality tests via the Kolmogorov-Smirnov method and Normal P-P plots. Heteroscedasticity was assessed through scatter plots of standardized residuals, while multicollinearity was evaluated using the Variance Inflation Factor (VIF) with a strict threshold of less than 10. All statistical assumptions were satisfied.

The study utilized path analysis to evaluate the hypothesized relationships, as this technique allows for the simultaneous estimation of direct and mediated effects among variables in the conceptual model. Data processing was performed using IBM SPSS Statistics version 26 and AMOS version 24. Mediation effects were specifically verified using the Sobel test at a significance level of $p < 0.05$. Besides that, secondary data from institutional records, peer-reviewed publications, and governmental databases were incorporated to contextualize the findings within the broader healthcare landscape.

FINDINGS AND DISCUSSION

Findings

Respondent Characteristics

The sociodemographic profile of the 374 participants shows a majority of female respondents (61.8%) compared to male respondents (38.2%). This gender distribution aligns with typical healthcare utilization patterns, where women often demonstrate higher engagement with clinical services. The characteristics of this study can be seen in Table 1 below.

Table 1. Description of Respondent Characteristics

No	Characteristics	Amount (n)	Percent (%)
Gender			
1	Male	143	38.2%
2	Female	231	61.8%
Age			
1	17-25 year	62	16.6%
2	26-35 year	127	34.0%
3	36-45 year	94	25.1%
4	46-55 year	40	10.7%
5	>55 year	51	13.6%
Level of Education			
1	Elementary School	41	11.0%
2	Junior High School	70	18.7%
3	Senior High School	191	51.1%
4	Diploma	23	6.1%
5	S1 (Bachelor's Degree)	49	13.1%
Visit Frequency			
1	Twice	32	8.6%
2	>2 times	342	91.4%
Income Permonth			
1	< 2 million IDR	236	63.1%
2	2-5 million IDR	127	34.0%
3	>5 million IDR	11	2.9%
Clinic			
1	Pediatric	39	10.4%
2	Cardiology	58	15.5%
3	Dermatology	5	1.3%
4	Obstetrics-Gynecology	22	5.9%
5	Internal Medicine	87	23.3%
6	Neurology	74	19.8%
7	Orthopedics	36	9.6%
8	Ophthalmology	19	5.1%
9	Otolaryngologist (ENT)	12	3.2%
10	General Surgery	22	5.9%

Total	374	100.0%
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With respect to age distribution, the most frequently represented cohort comprised individuals aged 26–35 years (127 respondents; 34.0%), followed by those aged 36–45 years (94 respondents; 25.1%), and the 17–25 age bracket (62 respondents; 16.6%). Respondents aged above 55 years constituted the smallest segment (51 respondents; 13.6%). The productive age group's dominance implies heightened expectations regarding service speed and precision, rendering reliability and responsiveness the most critically evaluated dimensions among this cohort, whereas older respondents placed comparatively greater weight on assurance and empathy owing to heightened physical vulnerability.

Regarding educational attainment, senior secondary school graduates represented the largest subset (191 respondents; 51.1%), succeeded by junior secondary graduates (70 respondents; 18.7%) and undergraduate degree holders (51 respondents; 13.1%). Educational background was observed to calibrate the capacity of respondents to interpret procedural information and assess the consistency of service delivery, with higher educational levels corresponding to elevated expectations across reliability, assurance, and tangibles dimensions.

Analysis of visit frequency indicated that an overwhelming majority of participants (342 respondents; 91.4%) had attended the facility on more than two occasions, while the remaining 32 respondents (8.6%) recorded precisely two visits. High visit frequency denotes accumulated experiential exposure, which constitutes an important informational basis for the evaluative judgments underpinning loyalty assessments. In terms of income level, 236 respondents (63.1%) reported monthly earnings below IDR 2,000,000, with 127 respondents (34.0%) falling within the IDR 2,000,000–5,000,000 range, and 11 respondents (2.9%) earning in excess of IDR 5,000,000. This income profile confirms that the study population predominantly comprises lower-income BPJS beneficiaries, a segment characterized by heightened sensitivity toward perceived service value across responsiveness, empathy, and tangibles dimensions. Regarding clinic of origin, internal medicine attracted the highest patient volume (87 respondents; 23.3%), followed by neurology (74 respondents; 19.8%) and cardiology (58 respondents; 15.5%).

Descriptive Analysis of Research Variables

Service Quality

Aggregated descriptive analysis of the service quality construct yielded an overall mean score of 3.026, situating respondents' collective perceptions within the favorable category. Among the five constituent dimensions, responsiveness recorded the highest sub-dimension mean (3.066), indicating that patients rated staff promptness and attentiveness most positively. Conversely, tangibles registered the lowest mean score (2.994), reflecting relatively modest assessments of the hospital's physical infrastructure, including waiting area conditions and ancillary facilities.

Table 2. Description of Service Quality Variables

No.	Strongly Disagree		Disagree		Agree		Strongly Agree		Mean
	(n)	%	(n)	%	(n)	%	(n)	%	
1	2	0.5	70	18.4	227	59.7	75	19.7	3.003
2	1	0.3	74	19.5	214	56.3	85	22.4	3.024
3	23	6.1	90	23.7	176	46.3	85	22.4	2.864
4	2	0.5	59	15.5	218	57.4	95	25	3.086

Physical Evidence										2.994
1	3	0.8	63	16.6	234	61.6	74	19.5	3.013	
2	3	0.8	89	23.4	222	58.4	60	15.8	2.906	
3	0	0	49	12.9	254	66.8	71	18.7	3.059	
4	0	0	53	13.9	247	65	74	19.5	3.056	
Reliability										3.009
1	0	0	61	16.1	245	64.5	68	17.9	3.019	
2	0	0	58	15.3	236	62.1	80	21.1	3.059	
3	0	0	63	16.6	225	59.2	86	22.6	3.061	
4	0	0	53	13.9	221	58.2	100	26.3	3.126	
Responsiveness										3.066
1	0	0	46	12.1	252	66.3	76	20	3.08	
2	0	0	65	17.1	244	64.2	65	17.1	3	
3	0	0	50	13.2	249	65.5	75	19.7	3.067	
4	0	0	67	17.6	219	57.6	88	23.2	3.056	
Guarantee										3.051
1	0	0	63	16.6	244	64.2	67	17.6	3.011	
2	0	0	60	15.8	253	66.6	61	16.1	3.003	
3	0	0	70	18.4	231	60.8	73	19.2	3.008	
4	0	0	59	15.5	251	66.1	64	16.8	3.013	
Empathy										3.009
Service Quality										3.026

Patient Satisfaction

Descriptive evaluation of the patient satisfaction variable produced an overall mean of 2.983, again falling within the favourable classification. The highest-rated item was indicator number five (mean = 3.048), while indicator number two registered the lowest mean value (2.813). Although the overall satisfaction level was constructive, these figures suggest that certain experiential dimensions particularly facility comfort and treatment effectiveness remain areas requiring targeted improvement to consolidate satisfaction into robust and enduring loyalty.

Table 3. Description of Patient Satisfaction Variables

No.	Strongly Disagree		Disagree		Agree		Strongly Agree		Mean
	(n)	%	(n)	%	(n)	%	(n)	%	
1	3	0.80%	57	15.00%	253	66.60%	61	16.10%	2.995
2	17	4.50%	109	28.70%	175	46.10%	73	19.20%	2.813
3	0	0.00%	59	15.50%	244	64.20%	71	18.70%	3.032

4	0	0.00%	63	16.60%	237	62.40%	74	19.50%	3.029
5	1	0.30%	56	14.70%	241	63.40%	76	20.00%	3.048
Satisfaction Variables									2.983

Patient Loyalty

The aggregate mean score for the patient loyalty construct was 2.974, classified as moderately favorable on the four-point Likert continuum. While indicators pertaining to institutional trust and word-of-mouth endorsement demonstrated comparatively stronger scores, dimensions reflecting psychological commitment and switching cost considerations remained underdeveloped, suggesting that loyalty is presently more behavioral than deeply affective in nature.

Table 4. Patient Loyalty Tabulation at Allam Medica General Hospital

No.	Questions	Strongly Disagree (n)	%	Disagree (n)	%	Agree (n)	%	Strongly Agree (n)	%	Mean	Interpretation
LP1	I feel that the services at Allam Medica Bumiayu General Hospital are better than other hospitals.	1	0.30%	73	19.20%	246	64.70%	54	14.20%	2.944	Fairly Good
LP2	I feel an emotional connection to this hospital.	0	0.00%	69	18.20%	244	64.20%	61	16.10%	2.979	Fairly Good
LP3	If there are other hospitals with more complete facilities in the Bumiayu area, would I still choose to seek treatment at Allam Medica General Hospital?	2	0.50%	83	21.80%	238	62.60%	51	13.40%	2.904	Fairly Good
LP4	I believe I actively share positive experiences here.	1	0.30%	61	16.10%	248	65.30%	64	16.80%	3.003	Good
LP5	I am willing to provide feedback for service improvement.	0	0.00%	52	13.70%	254	66.80%	68	17.90%	3.043	
Patient Loyalty										2.974	Fairly Good

Classical Assumption Tests

All statistical analyses in this study were performed using IBM SPSS Statistics version 26.

Normality Test

Residual normality was assessed through two complementary procedures. Visual inspection of the Normal P-P Plot indicated that data points distributed closely along the diagonal reference line, affirming approximate normality of model residuals.

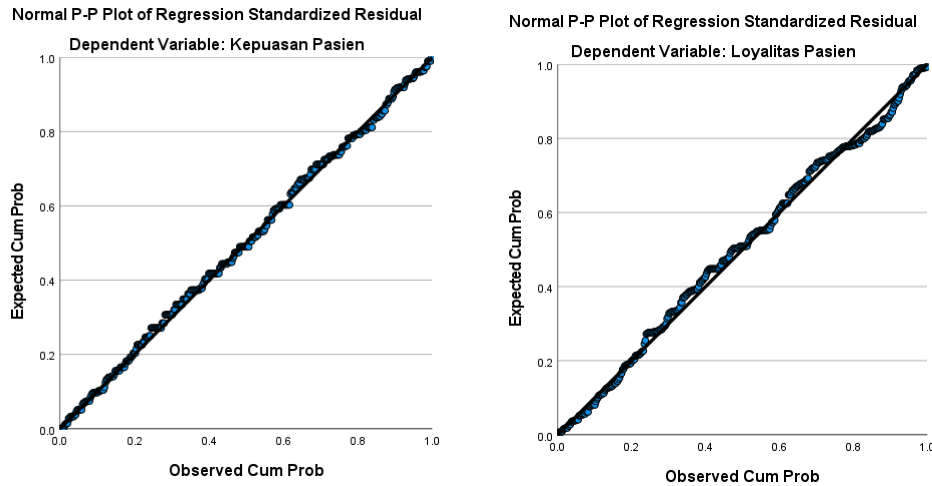


Figure 1. Testing Normality Using a Normal P-P Plot Graph
 Source: Processed Research Data using IBM SPSS Statistics version 26. (2025)

Quantitative confirmation was provided by the Kolmogorov-Smirnov test, which returned significance values of 0.200 for equation one and 0.164 for equation two. Both values exceeded the 0.05 threshold, confirming that the normality assumption was satisfied across both structural equations.

Table 5. Normality Test Using the Kolmogorov-Smirnov Test. One-Sample Kolmogorov-Smirnov Test

		Standardized Residual 1	Standardized Residual 2
N		374	374
Normal Parameters ^{a,b}	Mean	0	0
	Std. Deviation	0.99865862	0.99731543
Most Extreme Differences	Absolute	0.028	0.042
	Positive	0.028	0.042
	Negative	-0.028	-0.039
Test Statistic		0.028	0.042
Asymp. Sig. (2-tailed) ^c		0.200 ^d	0.164
Monte Carlo Sig. (2-Sig.)		0.703	0.122

tailed)e

99% Confidence Interval –		
Lower Bound	0.691	0.114
99% Confidence Interval –		
Upper Bound	0.714	0.131

Source: Processed Research Data using IBM SPSS Statistics version 26. (2025)

Heteroscedasticity Test

Assessment of heteroscedasticity was conducted via scatter plot visualization of standardized predicted values (ZPRED) against standardized residuals (SRESID). The resulting plot exhibited a random, structureless dispersion pattern without any discernible systematic trend, confirming that the homoscedasticity assumption was upheld across the model.

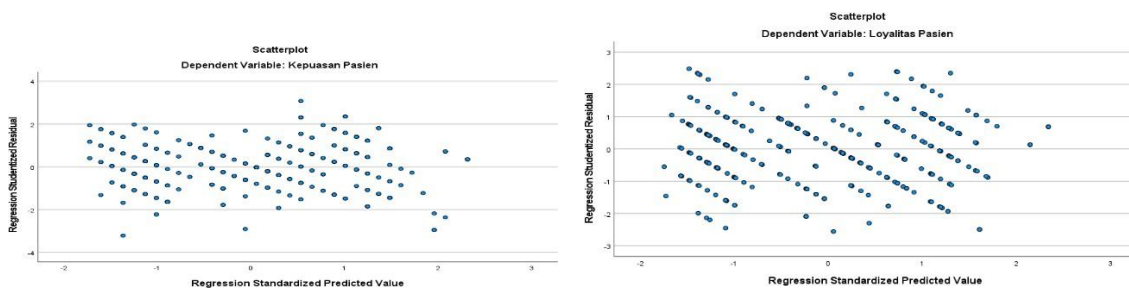


Figure2. Heteroscedasticity Test Using ZPRED and SRESID Scatter Plot Graphs Processed Research Data using IBM SPSS Statistics version 26. (2025)

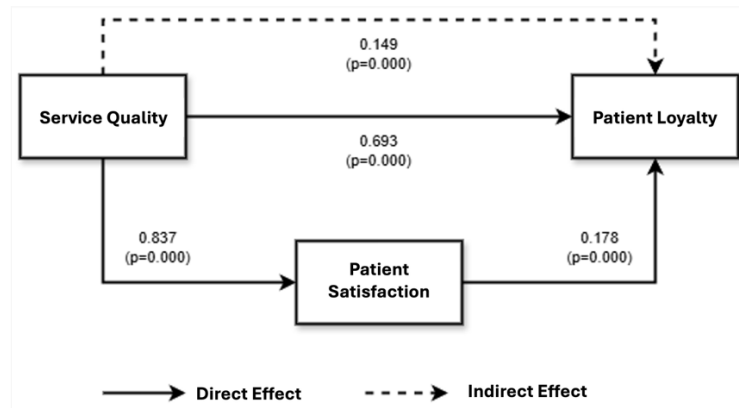
Multicollinearity Test

Variance Inflation Factor (VIF) values for all independent variables were computed and found to fall below the threshold of 10.0, establishing the absence of problematic multicollinearity within the structural model and confirming the independence of predictor variables.

Table 6. VIF Multicollinearity Test Using the VIF Testa

Model	Variable	Tolerance	VIF
1	Quality Sevices	0.299	3.344
	Patient satisfaction	0.299	3.344

a. Dependent Variable: Patient Loyalty



Picture 3. Path Diagram

Path Analysis Results

The path model was partitioned into two structural equations: the first capturing the effect of service quality on patient satisfaction, and the second modeling the combined effects of service quality and patient satisfaction on patient loyalty.

Effect of Service Quality on Patient Satisfaction

Path estimation for the first structural equation produced the following model (using standardized coefficients):

$$Z = 0.837X + e$$

The path coefficient linking service quality to patient satisfaction was 0.837, accompanied by a significance value of $p = 0.000$, confirming statistical significance at the 95% confidence level. The coefficient of determination (R^2) for this equation was 0.701, indicating that 70.1% of the variance in patient satisfaction was accounted for by perceived service quality.

Table 7. Path Analysis of the Influence of Service Quality on Patient Satisfaction

Model	Variable	B	Std. Error	Beta	t	Sig.
1	(Constant)	5.07E-15	0.028		0	1
	Service Quality	0.837	0.028	0.837	29.528	0

a. Dependent Variable: Patient Satisfaction

Processed Research Data using IBM SPSS Statistics version 26. (2025))

The results show a significance value of less than 0.05 ($p < 0.05$), indicating that there is a significant positive effect, meaning that the higher or better the quality of service, the more significant the effect on patient satisfaction.

Table 8. Coefficient of the Path of Service Quality Influence on Patient Satisfaction

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.837 ^a	0.701	0.7	0.54759797

a. Predictors: (Constant), Service Quality

The coefficient of determination for the effect of service quality on patient satisfaction was 0.701, meaning that 70.1 percent of the effect on patient satisfaction can be explained by service

quality, while the remaining effect is explained by other factors outside the scope of this study.

Effect of Service Quality and Patient Satisfaction on Patient Loyalty

The second structural equation yielded the following estimated model:

$$Y = 0.693X + 0.178Z + e$$

Service quality demonstrated a direct path coefficient of 0.693 toward patient loyalty (p = 0.000), while patient satisfaction contributed an additional direct coefficient of 0.178 (p = 0.000). The combined coefficient of determination was R² = 0.718, signifying that 71.8% of loyalty variance was jointly explained by service quality and patient satisfaction.

Table 9. Path Analysis of the Influence of Service Quality and Patient Satisfaction on Patient Loyalty

Model	Variable	B	Std. Error	Beta	t	Sig.
1	(Constant)	5.01E-15	0.028		0	1
	Service Quality	6.93E-01	0.05	0.693	13.751	0
	Patient Satisfactor	0.178	0.05	0.178	3.538	0

a. Variable Dependent: Patient Loyalty

The results show a significance value of less than 0.05 (p < 0.05), indicating that there is a significant positive effect, meaning that the higher or better the quality of service, the more significant the effect on patient loyalty. The effect of patient satisfaction on patient loyalty obtained a path coefficient of 0.178 with a significance value (p) of 0.000. These results show a significance value of less than 0.05 (p < 0.05), indicating that there is a significant positive effect, meaning that the higher or better the patient satisfaction, the more significant the effect on the higher or better patient loyalty.

Table 10. Path Coefficients of Service Quality and Patient Satisfaction on Patient Loyalty

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.848 ^a	7.18E-01	0.717	0.5320761

a. Predictors: (Constant), Patient Satisfaction and Patient Loyalty

The coefficient of determination for the effect of service quality and patient satisfaction on patient loyalty yielded an R-squared value of 0.718, meaning that 71.8 percent of the effect on patient loyalty can be explained by service quality and patient satisfaction, while the remaining effect is explained by other factors outside the scope of this study.

Mediation Effect of Patient Satisfaction

The standard indirect path indicating the effect of service quality on patient loyalty through patient satisfaction yielded an indirect path coefficient of 0.149 (p = 0.000), confirming statistical significance. Given that the direct effect of service quality on loyalty (0.693) remained substantial alongside the significant indirect effect, the mediation was characterized as partial, where patient satisfaction reinforced rather than completely replaced the direct relationship between service quality and loyalty.

Table 11. Path Analysis of Patient Satisfaction Mediating the Effect of Service Quality on Patient Loyalty

Model	Variable	B	Std. Error	Beta	t	Sig.
1	(Constant)					
	Service Quality	0.149	0.042	0.149	3.533	0

a. Intervening Variable: Patient Satisfaction

b. Dependent Variable: Patient Loyalty

Discussion

The Influence of Service Quality on Patient Loyalty

Perceived service quality exerts a statistically significant direct influence on patient loyalty with a path coefficient = 0.693, $p < 0.05$. Each incremental improvement in patients' service perception produces a corresponding increase in loyalty behaviour. The Service-Profit Chain framework explains this relationship. Organizations delivering superior service generate customer trust and emotional attachment, which consolidate long-term behavioural commitment (Heskett & Schlesinger, 1994). For rural BPJS-enrolled patients with limited access to alternative providers, service quality assumes a decisive role. Patients who perceive responsive, competent, and empathetic care maintain institutional engagement beyond insurance referral constraints (Katoni & Sijabat, 2023).

The magnitude of this coefficient aligns with evidence from comparable contexts. Research in Taiwanese regional hospitals identified responsiveness and interpersonal warmth as primary loyalty drivers among insured outpatients (Wu, 2018). Studies in Indonesian private hospitals affirmed that physician attentiveness and nursing responsiveness constitute the most influential service dimensions for generating loyalty intentions (Sulistyo & Hermawan, 2020). Evidence from digitally mediated healthcare models additionally demonstrates that service quality dimensions retain their predictive significance for loyalty even as care delivery modalities evolve (Alhassan, 2021).

Notwithstanding these statistical affirmations, field-level observations reveal that a subset of patients reported dissatisfaction with specific service aspects, including administrative processing delays, insufficient clarity in clinical communication, and perceived deficiencies in empathetic engagement from certain personnel categories (Nguyen, 2021). These qualitative signals represent important managerial intelligence. Isolated negative encounters can erode loyalty over successive service episodes. This finding reinforces the imperative for continuous complaint monitoring and responsive service correction (Cleary & Edgman-Levitan, 1997).

The Influence of Patient Satisfaction on Patient Loyalty

Patient satisfaction exerts a statistically significant positive effect on patient loyalty (path coefficient = 0.178, $p < 0.05$). Although this coefficient is comparatively modest, its significance lies in satisfaction's role as a relational bridge mediating the broader service quality–loyalty pathway. Although the absolute magnitude of this coefficient is comparatively modest, its significance is amplified by the construct's role as a relational bridge mediating the broader service quality–loyalty pathway.

Satisfaction in healthcare settings emerges from a multidimensional appraisal. Patients assess technical service delivery, interpersonal staff conduct, informational transparency, and environmental comfort against pre-existing expectations. When these dimensions meet or surpass patient anticipations, satisfaction generates relational reciprocity that strengthens psychological attachment to the institution (Cleary & Edgman-Levitan, 1997). For low-income BPJS beneficiaries,

satisfaction-derived affective loyalty represents a meaningful form of engagement that transcends behavioral repetition compelled by insurance system architecture (Guinness et al., 2022).

These findings resonate with evidence drawn from multiple national contexts. Turkish hospital research confirmed that patient satisfaction significantly mediates the service quality–loyalty relationship (Andreano & Pardede, 2023). Investigations from Iran similarly established that institutional trust, rooted in satisfaction with interpersonal service quality, constitutes the primary pathway through which affective loyalty is cultivated (Mothersbaugh, 2016). Research within Indonesian private hospital settings further corroborated that dimensions of reliability and assurance generate satisfaction responses that translate into statistically robust loyalty intentions, particularly among patients with established treatment histories at the facility (Sulistyo & Hermawan, 2020). Government hospital in Indonesia research added that humane and communicatively adept clinical interactions serve as potent determinants of satisfaction-driven loyalty among chronic disease patients (Wulandari & Susilo, 2019).

Three factors may explain why patient satisfaction yields a smaller direct coefficient (path coefficient = 0.178) compared to service quality (path coefficient = 0.693). First, loyalty in public insurance contexts is partly constrained by referral structures and financial limitations. These structural factors dilute the behavioral expression of satisfaction (Katoni & Sijabat, 2023). Second, the cross-sectional design captures satisfaction at a single time point. Loyalty consolidates over repeated positive episodes. Longitudinal evidence suggests satisfaction's influence intensifies as patients accumulate service encounters (Carvalho & Fernandes, 2018). Third, satisfaction may operate primarily as a mediator rather than a direct driver in this population. This pattern is consistent with expectation confirmation theory, where satisfaction translates quality perceptions into loyalty indirectly rather than directly.

The Influence of Service Quality on Patient Satisfaction

Among all estimated structural pathways in the present model, the relationship between service quality and patient satisfaction yielded the largest coefficient, recorded at 0.837 with a significance level of $p = 0.000$ and an associated coefficient of determination of $R^2 = 0.701$. A coefficient of this magnitude indicates that perceived service quality functions as the dominant proximal determinant of patient satisfaction, accounting for 70.1% of the variance in satisfaction within the structural model. This finding positions service quality not merely as one of several antecedents of satisfaction but as its primary generative force.

Conceptually, service quality in healthcare encompasses the convergence of technical procedural standards and relational interpersonal dimensions, jointly assessed by patients through the SERVQUAL framework's five constituent dimensions: tangibles, reliability, responsiveness, assurance, and empathy (Parasuraman et al., 1988). As patient-centered care paradigms gain institutional traction globally, empathy and responsiveness have emerged as particularly influential dimensions in shaping the subjective satisfaction experience, given their direct correspondence with patients' emotional comfort and sense of being genuinely valued as individuals rather than as procedural cases (Priporas et al., 2017). Satisfaction, in turn, governs a spectrum of consequential patient behaviors, including treatment adherence, social recommendation activity, and long-term institutional loyalty (Alrubaiee & Alkaa'ida, 2011).

Cross-national empirical evidence converges on the primacy of service quality as a determinant of satisfaction. Studies conducted in Taiwan demonstrated that service quality perceptions, particularly across the dimensions of physician competence and administrative responsiveness, exert strong and statistically robust influences on patient satisfaction outcomes (Griffin & Mahon, 1997). Research conducted in Turkish public hospital environments similarly affirmed that responsiveness and assurance were the most impactful dimensions in generating

favorable satisfaction evaluations ([Rahmawaty et al., 2021](#)). Within the Indonesian private hospital sector, scholarship has confirmed that the empathy and reliability dimensions carry disproportionate explanatory weight in satisfaction models, reflecting the culturally embedded importance of interpersonal care in the Indonesian healthcare experience ([Shie et al., 2022](#)).

Field data from the present study further reveal that, while the aggregate satisfaction outcome was favorable, certain patient subgroups reported experiential shortcomings related to the clarity of medical information, service timeliness, and the consistency of empathetic engagement across personnel categories ([Fian, 2016](#); [Gabriel & Ellitan, 2025](#)). These findings imply that the high overall coefficient should not be interpreted as indicating uniform satisfaction across all patient segments; rather, disaggregated satisfaction analyses and individually responsive service protocols are warranted to ensure that minority negative experiences do not accumulate into loyalty-threatening dissatisfaction over time ([Mothersbaugh, 2016](#)).

The Mediating Role of Patient Satisfaction in the Service Quality–Loyalty Relationship

The indirect pathway through which service quality influenced patient loyalty via patient satisfaction yielded a statistically significant mediation coefficient of 0.149 ($p = 0.000$), confirming that satisfaction functions as a meaningful intermediary in this structural relationship. The concurrent retention of a substantial direct service quality–loyalty coefficient (0.693) establishes the mediation as partial in character, indicating that service quality operates through dual mechanisms: an affective-experiential pathway routed through satisfaction and a more immediate relational pathway potentially mediated by institutional trust and perceived clinical competence ([Heskett & Jones, 2010](#)).

Expectation Confirmation Theory provides an explanatory scaffold for the satisfaction-mediated pathway. When delivered service confirms or surpasses prior patient expectations, the resulting confirmation generates satisfaction. Satisfaction then accumulates into loyalty-sustaining behavioral and attitudinal commitments ([Bhattacharjee, 2001](#)). The partial nature of the mediation implies that certain service quality dimensions may generate loyalty independently of the satisfaction evaluation process. Dimensions conveying institutional reliability and staff competence may operate through direct trust-formation mechanisms that run parallel to experiential satisfaction pathways ([Amin & Nasharuddin, 2011](#)).

These structural findings align with evidence from multiple empirical contexts. Research conducted in Turkey confirmed that satisfaction partially mediates the service quality–loyalty relationship in public hospital settings ([Baloglu, 2002](#)). Taiwanese investigations similarly documented partial mediation, identifying the clarity of medical information and administrative efficiency as dimensions whose effects on loyalty operated both directly and indirectly through satisfaction. A meta-analytic synthesis encompassing more than fifty independent studies established a mean satisfaction-mediated correlation of $r = 0.43$ between service quality and loyalty, reinforcing the generalizability of satisfaction's intermediary role across diverse healthcare populations and institutional types ([Prentice et al., 2019](#)). Indonesian scholarship likewise consistently identifies satisfaction as a significant, though not exclusive, mediating mechanism in the service–loyalty relationship ([Zeithaml et al., 1996](#)).

The dual-pathway structure carries important implications for hospital management strategy. Optimization efforts targeting only satisfaction improvement will capture the indirect loyalty dividend but will forgo the additional direct loyalty gains derived from broader service quality enhancement. Likewise, investments in technical service quality that neglect the experiential and relational dimensions underpinning satisfaction will yield suboptimal loyalty outcomes ([Alrubaiee & Alkaa'ida, 2011](#)). A comprehensive strategic orientation must simultaneously elevate objective service standards and cultivate the subjective experiential quality

from which satisfaction emerges. This approach is likely to be the most effective in maximizing patient loyalty within rural BPJS hospital environments (Wulandari & Susilo, 2019).

CONCLUSIONS

This research affirmed that service quality constitutes the principal driver of both patient satisfaction and patient loyalty within a rural Indonesian BPJS hospital context, thereby achieving all four research objectives. Service quality demonstrated a strong direct effect on patient satisfaction ($\beta = 0.837$; $p < 0.05$) and a substantial direct effect on patient loyalty ($\beta = 0.693$; $p < 0.05$), while patient satisfaction exerted a significant independent influence on loyalty ($\beta = 0.178$; $p < 0.05$) and confirmed its role as a partial mediator in the service quality–loyalty pathway ($\beta = 0.149$; $p < 0.05$). Descriptively, service quality scored a mean of 3.026, patient satisfaction scored 2.983, and patient loyalty scored 2.974. Responsiveness emerged as the highest-performing dimension while tangibles represented the most critically underperforming area. Patient loyalty was categorized as moderately favourable, with trust and word-of-mouth indicators performing comparatively better than psychological commitment and switching cost dimensions, suggesting that affective loyalty remains incompletely consolidated.

The dual-pathway mediation structure identified wherein service quality simultaneously generates loyalty through direct relational mechanisms and through satisfaction-mediated experiential pathways carries substantive strategic implications. Hospital management operating within resource-constrained BPJS environments is advised to prioritize empathy-driven and responsive service practices as the foundational elements of patient engagement strategy, given their demonstrated capacity to generate satisfaction and loyalty simultaneously. Targeted improvements in physical service infrastructure and administrative process efficiency are additionally warranted to address identified tangibles deficiencies. This study offers three novel contributions. First, it quantifies partial mediation specifically within a rural BPJS hospital context where prior empirical evidence remains sparse. Second, it demonstrates that direct service quality effects ($\beta = 0.693$) substantially outweigh satisfaction-mediated effects ($\beta = 0.178$) in this low-income population. Third, it provides empirical benchmarks ($R^2 = 0.701$ for satisfaction; $R^2 = 0.718$ for loyalty) for future comparative research in similar resource-limited healthcare settings.

Several methodological limitations constrain the generalizability of these findings. First, the cross-sectional research design precludes causal inference regarding the temporal dynamics through which service quality perceptions evolve into loyalty behaviour. Second, exclusive reliance on self-reported questionnaire data introduces the potential for response bias, particularly among low-literacy respondents. Third, the single-site sampling frame restricts the applicability of findings to other rural BPJS hospital contexts with differing institutional characteristics and patient demographic compositions.

Subsequent investigations should adopt longitudinal designs capable of tracking the progressive consolidation of satisfaction into loyalty across multiple service episodes. Comparative multi-site studies encompassing diverse rural and urban hospital settings would enhance the external validity of the structural relationships documented here. Researchers may also integrate qualitative methodological components to capture the experiential nuances underlying patient satisfaction evaluations that quantitative survey instruments are inherently limited in detecting. Exploration of supplementary mediating and moderating constructs including institutional trust, perceived value, and patient health literacy would further enrich theoretical understanding of the pathways through which service quality influences long-term loyalty in public insurance-dominated healthcare environments.

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