

LINKING SERVICE QUALITY TO PATIENT LOYALTY THROUGH PATIENT SATISFACTION IN AN INDEPENDENT MEDICAL PRACTICE

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ABSTRAK

Tujuan penelitian ini adalah untuk menguji peran kualitas layanan dalam mempengaruhi loyalitas pasien di praktik medis independen di Tangerang, Indonesia, melalui variabel mediasi yaitu kepuasan pasien. Meskipun sebagian besar penelitian sebelumnya mengenai kualitas layanan dan loyalitas berfokus pada pengaturan perawatan kesehatan rumah sakit atau institusional, penelitian dalam praktik medis independen masih relatif terbatas, khususnya dalam interaksi yang berpusat pada dokter di mana konsultasi pribadi adalah pertemuan layanan utama. Penelitian ini menggunakan desain kuantitatif *cross-sectional* dengan pengambilan sampel berurutan, dan menganalisis 180 jawaban yang dikumpulkan melalui Google Forms online. Analisis data dilakukan melalui *Partial Least Squares–Structural Equation Modeling* (PLS-SEM) menggunakan perangkat lunak SmartPLS 4 untuk menguji efek langsung dan mediasi antar variabel. Hasil menunjukkan bahwa kualitas layanan secara positif dan signifikan mempengaruhi kepuasan pasien dan loyalitas pasien, dengan kepuasan pasien bertindak sebagai variabel mediasi dalam hubungan ini. Di antara lima dimensi kualitas layanan, empati diidentifikasi sebagai komponen yang paling signifikan, menunjukkan bahwa komunikasi pribadi dan interaksi interpersonal sangat penting dalam layanan medis independen. Temuan ini berkontribusi pada perluasan teori kualitas layanan dalam konteks perawatan kesehatan yang berpusat pada dokter dan menawarkan implikasi praktis bagi praktisi independen untuk memprioritaskan dimensi relasional dan empatik dalam mengembangkan strategi yang berpusat pada pasien.

Kata Kunci: Kualitas Layanan, Loyalitas Pasien, Kepuasan Pasien, Dokter, Praktik Medis Independen

ABSTRACT

The aim of this study is to examine the role of service quality in influencing patient loyalty at an independent medical practice in Tangerang, Indonesia, through a mediating variable that is patient satisfaction. While most previous studies concerning service quality and loyalty have focused on hospital or institutional healthcare settings, research within independent medical practice remains relatively limited, particularly in physician-centered interactions where personal consultation is the primary service encounter. This study used a quantitative cross sectional design with consecutive sampling, and analyzed 180 responses collected through an online Google Forms. The analysis of the data was conducted through Partial Least Squares–Structural Equation Modeling (PLS-SEM) utilizing SmartPLS 4 software to test the direct and mediating effects between the variables. The results indicate that service quality positively and significantly impacts both patient satisfaction and patient loyalty, with patient satisfaction acting as a mediating variable in this association. Among the five dimensions of service quality, empathy was identified as the most significant component, suggesting that personal communication and interpersonal interaction are central in independent medical services. These findings contribute to extending service quality theory within physician-centered healthcare contexts and offer practical implications for independent practitioners to prioritize relational and empathetic dimensions in developing patient-centered strategies.

Keywords: Service Quality, Patient Loyalty, Patient Satisfaction, Physician, Independent Medical Practice

1. INTRODUCTION

Background

Independent medical practice represents a form of primary healthcare service delivered by professionals such as physicians, dentists, or psychologists who operate independently without reliance on institutional affiliation (Kementerian Kesehatan Republik Indonesia, 2025). In

practice, physicians hold the responsibility to prioritize public welfare and address all aspects of healthcare delivery, including promotive, preventive, curative, and rehabilitative efforts (Pengurus Besar Ikatan Dokter Indonesia, 2012). As the frontline of primary care, independent practitioners often hold a role as the first point of contact for patients. This more personal interaction has the potential to foster long-term relationships and create unique patient perceptions of service quality (Donabedian, 1988).

Patients' perceptions of service quality in independent practices may vary, as shown in a study by Rina et al. (2017). Although patient satisfaction levels between independent practices and private clinics did not differ significantly, the dimensions of reliability and empathy demonstrated notable differences. The empathy dimension, which reflects a physician's ability to understand patients' specific needs and show genuine concern, has been shown to be strongly influential on patient satisfaction and loyalty (Chaniotakis & Lymperopoulos, 2009).

In healthcare services, patient loyalty denotes a dedication to repeatedly selecting the same healthcare provider even when other options are accessible (El Garem et al., 2024; Oliver, 1999). Generally, loyalty is influenced by multiple aspects such as service quality, trust, comfort, and satisfaction, with the latter two proven to have the most dominant effects (Rahma & Prayoga, 2022). High service quality fosters satisfaction, which in turn forms the foundation of loyalty (Meesala & Paul, 2018). Patient satisfaction reflects both a cognitive and emotional assessment of their healthcare experience (Dagger et al., 2007; Ware et al., 1983), playing a crucial role in promoting return visits and favorable word-of-mouth endorsements (El Garem et al., 2024).

Most of the existing literature on service quality, patient satisfaction, and patient loyalty has predominantly focused on hospital settings. In addition to the study by Alrubaiee & Alkaa'ida (2011), several investigations such as those by Manzoor et al. (2019) and Rostami et al. (2019) have examined these relationships within large-scale healthcare institutions. Moreover, the meta-analysis conducted by Olesen & Bathula (2022) indicates that the majority of patient satisfaction studies originate from hospital environments. In urban areas such as Tangerang, which has 643 general practitioners (Badan Pusat Statistik Kota Tangerang, 2024), independent medical practices play an important role in supporting and strengthening primary healthcare services. The population of Tangerang City has reached 1,927,815 people, highlighting a gap when compared with the ideal doctor-population ratio of 1:1,000 (Badan Pusat Statistik Kota Tangerang, 2025; Kementerian Kesehatan Republik Indonesia, 2022). This suggests that service quality in independent medical practices may be an essential aspect in reinforcing the overall performance of primary healthcare and addressing existing shortages.

Although numerous studies have examined the relationships between service quality, patient satisfaction, and patient loyalty, the majority of these investigations have been conducted in hospital environments or large healthcare institutions where service delivery involves multiple health professionals and administrative systems (Alrubaiee & Alkaa'ida, 2011; Manzoor et al., 2019; Rostami et al., 2019). A recent meta-analysis by Olesen and Bathula (2022) further confirms that empirical evidence on patient satisfaction and loyalty remains predominantly derived from hospital-based studies, thereby limiting theoretical development in more personal healthcare contexts. This emphasis overlooks independent medical practice settings where the primary service encounter consists of direct, continuous, and physician-centered interactions rather than multi-provider service structures. Independent practitioners differ substantially from hospital-based service delivery models because relational, interpersonal, and experiential elements are delivered by a single healthcare provider rather than a multidisciplinary team

(Donabedian, 1988; Meesala & Paul, 2018). Therefore, there remains a need to deepen empirical and theoretical understanding of how service quality generates patient satisfaction and loyalty in independent medical practice.

By examining how service quality within independent medical practices influences patient loyalty, with patient satisfaction functioning as a mediating variable, this study aims to address the existing gap and provide a more comprehensive understanding of how service quality affects patient satisfaction and loyalty within physician-centered healthcare encounters, thereby extending service quality theory in independent practice settings.

Research Questions

The research questions in this study are as follows:

1. Does the service quality of independent medical practitioners affect patient loyalty?
2. Does the service quality of independent medical practitioners affect patient satisfaction?
3. Does patient satisfaction influence patient loyalty?
4. Does service quality affect patient loyalty in independent medical practice through patient satisfaction as a mediating variable?

Service Quality

Service quality in this study is conceptually grounded in the Service Quality Theory proposed by Parasuraman, et al. (1985), which explains that service evaluations result from the comparison between expected and actual service performance. Within this theoretical framework, perceived service quality functions as a multidimensional construct that shapes customer satisfaction and determines subsequent behavioral intentions such as loyalty. Parasuraman et al. (1985) developed the SERVQUAL model as the most widely accepted operationalization of these theoretical principles, consisting of five core dimensions: tangibility, reliability, responsiveness, assurance, and empathy.

Tangibility reflects the physical evidence of the service environment including cleanliness, comfort, and appearance of practitioners; reliability emphasizes accuracy and consistency in service delivery; responsiveness concerns promptness and willingness to assist patients; assurance relates to competency and a sense of security during consultations; and empathy reflects individualized care and understanding of patient needs. These dimensions collectively represent the structural and relational components of perceived quality and are widely applied in healthcare services globally, particularly in emerging healthcare markets (Meesala & Paul, 2018). In this study, SERVQUAL dimensions are used as indicator items to measure service quality as conceptualized under Service Quality Theory and aligned with its causal direction toward satisfaction and loyalty.

Furthermore, perceptions of service quality are shaped through cognitive and affective processes that develop from customer experiences, as stated by Dagger & Sweeney (2006). In complex service environments such as healthcare, quality evaluation is influenced by two dimensions: the functional dimension and the relational dimension. The functional dimension involves aspects such as reliability and the effectiveness of interactions, while the relational dimension encompasses elements such as trust and psychological comfort. Cronin & Taylor (1992) also proposed that service quality represents an attitude formed through the evaluation of service performance, rather than merely the gap between expectations and perceptions as suggested in the SERVQUAL model.

Patient Satisfaction

Patient satisfaction represents a cognitive and affective evaluation of how well healthcare services meet prior expectations (Dagger et al., 2007; Ware et al., 1983). Based on Service Quality Theory (Parasuraman et al., 1985), satisfaction functions as a consequence of perceived service performance relative to expectations and serves as an intermediary mechanism that channels service perceptions into loyalty behavior. When the services offered fulfill or surpass these expectations, patients generally experience satisfaction and are more inclined to return for future appointments (Kotler et al., 2008).

Empirical findings in healthcare consistently show that patient satisfaction is shaped by service quality dimensions including empathy, responsiveness, and assurance (Gunawan et al., 2019; Meesala & Paul, 2018). Furthermore, Sitzia & Wood (1997) explain that satisfaction is strongly influenced by patients' social, cultural, and psychological contexts, meaning that the evaluation of satisfaction is not solely related to technical medical aspects but also to the affective experiences patients undergo during healthcare encounters.

A wide range of studies has shown that patient satisfaction is closely linked to post-service behaviors, including the intention to return, adherence to therapy, and continued use of the same provider (Al-Abri & Al-Balushi, 2014). Therefore, patient satisfaction is considered both an important outcome and an indicator of service quality, playing a key role in establishing long-term relationships between healthcare providers and their patients. In the context of independent medical practice, patient satisfaction integrates both clinical and interpersonal dimensions because the service encounter is characterized by direct physician interaction and relational continuity (Donabedian, 1988).

Patient Loyalty

Patient loyalty signifies a patient's dedication to persist in utilizing the same healthcare services and to recommend them to others (Kandampully et al., 2015). In healthcare, loyalty is reflected through repeated visits, continuity of care, and sustained relationships with the same provider (Zhou et al., 2017). Within the theoretical framework of Service Quality Theory (Parasuraman et al., 1985), loyalty emerges when perceived service performance meets or exceeds patient expectations through satisfaction mechanisms. Positive interactions and satisfactory service experiences therefore encourage patients to develop long-term trust, repeat utilization, and positive word-of-mouth recommendation (Al-Abri & Al-Balushi, 2014).

In healthcare settings, loyalty is complex because it is influenced by emotional factors, interpersonal relationships, and perceptions of provider professionalism (Amin & Nasharuddin, 2013). Patient loyalty can also be viewed as the result of an ongoing psychological process. A meta-analysis conducted by Kemp et al. (2014) shows that satisfaction has a strong relationship with loyalty across various healthcare contexts, primarily through the mechanisms of trust and perceived value. When patients feel appreciated, heard, and provided with high-quality care, their level of loyalty increases, leading to repeat visits and positive recommendations. Thus, improving service quality correlates with not only short-term satisfaction but also contributes to building long-term relationships aimed at sustaining patient retention.

Accordingly, improving service quality not only enhances short-term satisfaction but also promotes long-term loyalty, which represents a key indicator of healthcare service performance in both institutional and primary-care contexts (Liu et al., 2021).

Relationship between Service Quality and Patient Loyalty

According to Service Quality Theory (Parasuraman et al., 1985), higher perceived service performance is associated with favorable behavioral intentions including continued use of health services and loyalty to providers. Empirical studies in healthcare contexts consistently confirm that service quality positively influences loyalty (Meesala & Paul, 2018; El Garem et al., 2024). Delianna (2024) also reported that increased perceived service quality strongly predicts patient loyalty in Indonesian healthcare services. These findings collectively demonstrate that when healthcare services are experienced as reliable, responsive, and accurate, patients are more likely to maintain long-term commitment and recommend the provider to others. In independent medical practice, where the service encounter is primarily physician-centered, interpersonal quality and accuracy in care delivery may further reinforce this association, extending the application of Service Quality Theory to individualized service environments rather than institutional settings.

H1: Service quality has a positive effect on patient loyalty.

Relationship between Service Quality and Patient Satisfaction

Service Quality Theory (Parasuraman et al., 1985) conceptualizes patient satisfaction as a consequence of perceived service performance relative to expectations, implying that higher perceived quality should lead to greater satisfaction. El Garem et al. (2024) demonstrated that higher perceived service quality significantly increases patient satisfaction, and that SERVQUAL dimensions, including tangibility, reliability, responsiveness, assurance, and empathy, jointly shape patient perceptions of quality. This suggests that service evaluation is not determined solely by clinical outcomes but also by patients' interaction experience and the healthcare environment.

In addition, Kuwaiti and Dayan (2020) found that service quality positively and significantly influences patient satisfaction in outpatient settings, with timeliness and attentiveness to patient needs identified as essential contributors. These results indicate that higher service quality increases the likelihood of patients feeling satisfied with the care they receive. In the context of independent medical practice, the quality of direct physician–patient interaction may further reinforce this relationship, extending Service Quality Theory to more individualized care encounters.

H2: Service quality has a positive effect on patient satisfaction.

Relationship between Patient Satisfaction and Patient Loyalty

Satisfaction is considered a foundation for loyalty within the Service Quality Theory framework (Parasuraman et al., 1985). El Garem et al. (2024) demonstrated that patient satisfaction positively and significantly affects loyalty, indicating that higher satisfaction levels are associated with a greater likelihood of continuing to use the same healthcare services. Meesala and Paul (2018) similarly showed that satisfaction is a direct determinant of loyalty, with reliability and responsiveness contributing most strongly to satisfaction and consequently reinforcing loyalty. Sofia (2023) further validated these findings in a study conducted at a dental teaching hospital in Jakarta, showing that greater satisfaction was associated with increased return intention and recommendation behaviors. Although the effect size reported was moderate, the direction of influence remained consistent. In independent medical practice, where the healthcare encounter is based on direct physician–patient interaction, maintaining patient satisfaction through empathy, communication, and positive service experiences may further strengthen loyalty, thereby extending the application of Service Quality Theory to individualized healthcare encounters.

H3: Patient satisfaction has a positive effect on patient loyalty.

The Mediating Role of Patient Satisfaction between Service Quality and Patient Loyalty

The relationship between service quality and patient loyalty is understood to operate partly through patient satisfaction. Meesala and Paul (2018) reported that reliability and responsiveness are the service quality dimensions most strongly associated with satisfaction, which subsequently strengthens loyalty. Consistent results were shown by Delianna (2024) in a study conducted at FMC Hospital Bogor, where patient satisfaction was found to mediate the association between service quality and loyalty. These findings confirm the mechanism proposed within Service Quality Theory, in which improved perceived service performance enhances satisfaction, which in turn forms the basis of loyalty (Parasuraman et al., 1985).

Further support for this mediating pathway has also been reported by El Garem et al. (2024) and Kuwaiti and Dayan (2020), indicating that patient satisfaction either fully or partially transmits the effect of service quality on loyalty. In independent medical practice, this mediating process may be more pronounced, as satisfaction derives not only from clinical competence but also from empathetic interaction, effective communication, and individualized care. When patients feel that their needs are acknowledged and respected, satisfaction is more likely to develop into long-term commitment and loyalty.

H4: Service quality influences patient loyalty in independent medical practice through patient satisfaction.

Taken together, these relationships are grounded in Service Quality Theory, which posits that perceived service performance shapes evaluations and subsequent behavioral intentions. By examining how service quality influences loyalty directly and indirectly through satisfaction within physician-centered encounters, this study extends the application of the theory beyond institutional healthcare settings toward individualized independent practice contexts. This theoretical linkage highlights that interpersonal dimensions such as empathy may be more salient predictors of satisfaction and loyalty in independent medical practice compared with large-scale healthcare services.

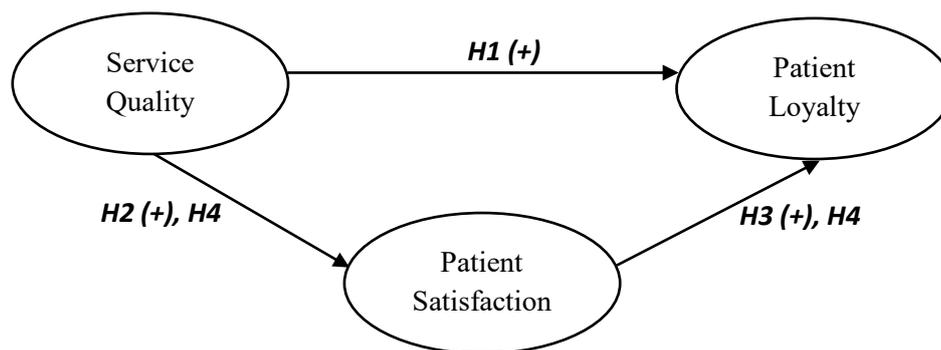


Figure 1. Research Model

2. RESEARCH METHOD

This research utilized a quantitative cross-sectional survey design aimed at analyzing the effect of service quality on patient loyalty, with patient satisfaction serving as a mediating variable. The population in this study comprised patients who had previously received services at an independent medical practice in Tangerang. A total of 180 respondents were included as the research sample using non-probability consecutive sampling, where all individuals meeting the inclusion criteria were recruited sequentially until the desired sample size was reached.

Consecutive sampling was chosen due to the feasibility of recruiting participants directly at the point of care and is commonly used in health-related studies with limited sampling frames (Sastroasmoro & Ismael, 2011).

The inclusion criteria consisted of adult patients aged ≥ 18 years who had received consultation at the medical practice at least once prior to participating and were able to complete the questionnaire independently. First-time visitors or patients who had not interacted directly with the physician were excluded in order to ensure that respondents had adequate experience to evaluate satisfaction and loyalty. Demographic information including age and gender was also collected to describe respondent characteristics.

The service quality variable was measured using five SERVQUAL dimensions comprising 15 indicators, patient satisfaction was measured with four indicators, and patient loyalty with five indicators, all assessed on a five-point Likert scale (1 = strongly disagree, 5 = strongly agree). A structured questionnaire with informed consent was distributed offline and online via Google Forms. Measurement items are summarized in a separate table for clarity. To minimize common method bias, all responses were collected anonymously and indicator wording was carefully randomized across sections. Data were analyzed using a Partial Least Squares–Structural Equation Modeling (PLS-SEM) approach with SmartPLS version 4 to examine both direct relationships and mediation effects between variables.

Measurement of Research Variables

Service quality was measured across five dimensions and 15 indicators (Table 1). The tangibility dimension was represented by four indicators, reliability by three indicators, responsiveness by three indicators, assurance by two indicators, and empathy by three indicators. These measurements were derived from earlier studies conducted by El Garem et al. (2024) and Meesala & Paul (2018). Patient satisfaction was examined using four indicators adapted from El Garem et al. (2024) and Meesala & Paul (2018). Meanwhile, patient loyalty was measured using five indicators adapted from El Garem et al. (2024), Sofia (2023), dan Arab et al. (2012).

Table 1. Measurement of the Service Quality, Patient Satisfaction, and Patient Loyalty

Variable	Dimension	Item	Code	Source
Service Quality	Tangibility	The doctor's practice facilities are clean and comfortable	TAN1	El Garem et al. (2024), Meesala & Paul (2018)
		The doctor appears neat and professional	TAN2	
		Information about the doctor's practice is easily accessible online	TAN3	
		The practice location provides adequate parking space	TAN4	
	Reliability	The doctor provides accurate medical treatment since the first visit	REL1	
		The doctor prescribes medications according to my medical needs	REL2	
		The service fees are appropriate for the quality of care provided	REL3	
	Responsiveness	The doctor responds clearly to my questions and needs	RESP1	
		The doctor is willing to assist patients outside regular practice hours in case of emergencies	RESP2	
		The doctor provides services without long waiting times	RESP3	
	Assurance	The doctor makes me feel safe during the	ASR1	

	consultation		
	My privacy is well protected during the consultation	ASR2	
Empathy	The doctor communicates clearly with me	EMP1	
	The doctor pays attention to my needs as a patient	EMP2	
	The doctor listens to my concerns with genuine empathy	EMP3	
Patient Satisfaction	I feel that the treatment results provided by the doctor meet my expectations	PS1	El Garem et al. (2024)
	I feel comfortable receiving medical care at this practice	PS2	Meesala & Paul (2016)
	I have a positive perception of this medical practice	PS3	
	My needs are fulfilled through the services provided by this doctor	PS4	
Patient Loyalty	I choose this doctor's practice as my primary option for medical treatment	PL1	El Garem et al. (2024),
	I recommend this doctor to others	PL2	Sofia
	I continue choosing this doctor even if there are cheaper alternatives	PL3	(2023), Arab et al.
	I perceive this doctor's service to be better than that of other doctors I have visited	PL4	(2012)
	I feel loyal to this doctor	PL5	

3. RESULTS AND DISCUSSIONS

This study involved 180 respondents with a relatively balanced gender distribution, consisting of 102 females (57%) and 78 males (43%). Regarding age, the lower cut-off of 18 years was selected because this age corresponds with the developmental period of emerging adulthood, commonly defined as ages 18–25 (Arnett, 2000). The subsequent age intervals were arranged in 10-year categories (25–34, 35–44, 45–54, and >55), to reflect decade-based segmentation across adult life-stages. The majority of respondents were 36–45 years old (38%), followed by those aged 26–35 years (25%), 46–55 years (20%), 18–25 years (13%), and >55 years (4%). Based on these results, most participants in this research were women within the 36–45 years age range.

The results of the analysis showed that all measurement tools fulfilled the necessary standards for validity and reliability. The convergent validity test, based on the Average Variance Extracted (AVE) values, demonstrated that every construct achieved AVE values exceeding the minimum limit of .5 (Hair Jr et al., 2021), suggesting that the indicators effectively represented their respective constructs (Table 2).

Table 2. Convergent Validity

Variable/Dimension	Average Variance Extracted
Service Quality	.633
Tangibility	.585
Reliability	.685
Responsiveness	.732
Assurance	.815
Empathy	.713
Patient Satisfaction	.583
Patient Loyalty	.596

Meanwhile, the discriminant validity test revealed that all Heterotrait-Monotrait Ratio (HTMT) values were below .90 (<.90), demonstrating that each variable had adequate discriminant validity and could be clearly distinguished from other constructs (Table 3).

Table 3. Discriminant Validity

Variable/Dimension	HTMT (<i>Heterotrait-Monotrait Ratio</i>)
Patient Satisfaction ↔ Patient Loyalty	.472
Service Quality ↔ Patient Loyalty	.482
Service Quality ↔ Patient Satisfaction	.625

The reliability test showed that all indicators had loading factor values exceeding .6 (>.6), confirming the indicators' consistency and reliability in measuring the study variables (Table 4). Furthermore, the composite reliability values for each construct surpassed .7 (>.7), indicating that the internal consistency of all measurement items was satisfactory (Table 5).

Table 4. Reliability Indicators

Variable	Dimension	Factor Loading	Indicator	Factor Loading
Service Quality	Tangibility	.766	TAN1	.785
			TAN2	.798
			TAN3	.750
			TAN4	.725
	Reliability	.799	REL1	.806
			REL2	.870
			REL3	.805
	Responsiveness	.739	RESP1	.864
			RESP2	.848
			RESP3	.854
	Assurance	.766	ASR1	.901
			ASR2	.905
	Empathy	.829	EMP1	.849
			EMP2	.854
			EMP3	.829
Variable		Indicator		Factor Loading
Patient Satisfaction			PS1	.747
			PS2	.761
			PS3	.780
			PS4	.767
Patient Loyalty			PL1	.789
			PL2	.815
			PL3	.798
			PL4	.718
			PL5	.736

The composite reliability values from the internal consistency analysis for every variable indicator exceeded .7 (>.7). This suggests that the indicators employed for each variable in this study are trustworthy and dependable.

Table 5. Internal Consistency Reliability

Variable/Dimensi	Composite Reliability
Service Quality	.896
Tangibility	.849
Reliability	.867
Responsiveness	.891
Assurance	.898
Empathy	.881
Patient Satisfaction	.848
Patient Loyalty	.880

The multicollinearity test indicated that all Variance Inflation Factor (VIF) values fell below 5, implying no significant correlation among the independent variables, and therefore the model was considered appropriate for analysis (Table 6).

Table 6. Multicollinearity

Variable	Value	Result
PL = f (SQ, PS)		
SQ	1.357	No multicollinearity
PS	1.357	

The coefficient of determination (R^2) analysis showed that service quality accounted for 26.3% of the variance in patient satisfaction and 21.0% of the variance in patient loyalty, while the rest of the variance influenced by other factors beyond the research model (Table 7).

Table 7. Determinant coefficient

Variable	R-square	R-square adjusted	Result
Patient Satisfaction	.263	.259	Low
Patient Loyalty	.210	.201	Low

The predictive power (Q^2) analysis revealed that the model's predictive ability was categorized as small, with Q^2 values for patient satisfaction ranging from .110 to .149 and for patient loyalty from .062 to .127 (Table 8). Nevertheless, comparison results between the PLS and linear models indicated that the PLS model had lower error values (RMSE and MAE), suggesting better predictive accuracy despite its relatively low predictive strength (Table 10).

Table 8. Predictive Power

Variable Indicator	Q^2 predict	PLS Model		LM Model	
		RMSE	MAE	RMSE	MAE
PS1	.149	69.679	56.509	69.949	56.367
PS2	.146	68.914	56.986	69.987	57.269
PS3	.110	74.399	58.050	75.633	58.832
PS4	.142	66.696	55.126	68.749	56.469
PL1	.127	70.667	58.207	71.958	58.341
PL2	.073	73.298	61.971	74.375	62.886
PL3	.115	67.732	55.832	69.462	56.608
PL4	.062	72.826	59.583	74.768	61.003
PL5	.076	76.592	62.847	77.880	62.974

Based on the hypothesis testing results (Table 9), all relationships among the variables in the research model were statistically significant. The first hypothesis (H1) confirmed that service quality positively influences patient loyalty ($\beta = .300$, $t = 3.814$, $p < .001$), indicating that higher perceived service quality is associated with increased patient loyalty. The second hypothesis (H2) showed a significant positive effect of service quality on patient satisfaction ($\beta = .513$, $t = 8.117$, $p < .001$), suggesting that improvements in service quality enhance patient satisfaction in independent medical practice services. The third hypothesis (H3) indicated that patient satisfaction positively contributes to patient loyalty, although with a smaller effect size ($\beta = .224$, $t = 2.987$, $p = .003$). Lastly, the fourth hypothesis (H4) demonstrated that service quality indirectly influences patient loyalty through patient satisfaction ($\beta = .115$, $t = 2.622$, $p = .009$). Because the direct effect remained significant, the mediation is classified as partial. Additionally, the R^2 values (.26 for loyalty and .26 for satisfaction) indicate moderate explanatory power of the structural model. Overall, these findings indicate that in independent medical practice settings,

service quality can strengthen patient loyalty both directly and indirectly through patient satisfaction.

Table 9. Hypothesis Testing Results

Hypothesis	Variable	Value	Result
H1	Service Quality → Patient Loyalty	β: .224 p-value: .003 t-value: 3.814 f ² : .084	Supported
H2	Service Quality → Patient Satisfaction	β: .513 p-value: .000 t-value: 8.117 f ² : .357	Supported
H3	Patient Satisfaction → Patient Loyalty	β: .224 p-value: .003 t-value: 2.987 f ² : .047	Supported
H4	Service Quality → Patient Satisfaction → Patient Loyalty	β: .115 p-value: .009 t-value: 2.622	Supported (partial mediation)

Following the PLS-SEM procedures, the algorithm estimation was first executed to obtain the standardized path coefficients and the explanatory power (R²) of each endogenous construct, as illustrated in Figure 2. Subsequently, a bootstrapping procedure using 5,000 subsamples was applied to assess the statistical significance of the structural paths. The bootstrapping output, presented in Figure 3, displays the resulting coefficients, t-values, and p-values, which form the basis for testing the research hypotheses in this study.

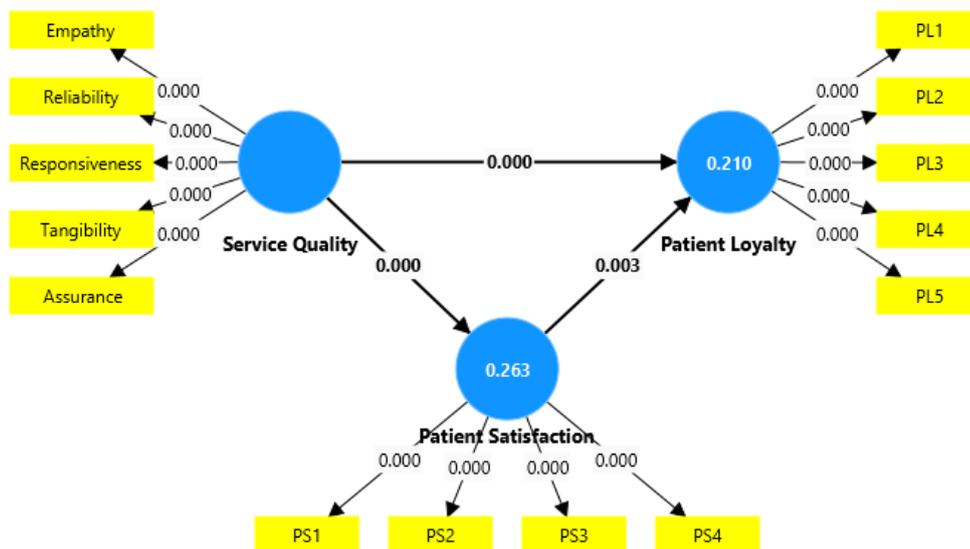


Figure 2. PLS Algorithm Output

Path coefficients - Mean, STDEV, T values, p values					
	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values
Patient Satisfaction -> Patient Loyalty	0.224	0.225	0.075	2.987	0.003
Service Quality -> Patient Loyalty	0.300	0.312	0.079	3.814	0.000
Service Quality -> Patient Satisfaction	0.513	0.522	0.063	8.117	0.000

Figure 3. Bootstrapping Results Showing Path Coefficients, T-values, and Significance

It was discovered that service quality positively and significantly influences patient loyalty (H1). This finding reinforces the theory that patients' views on the quality of service have a considerable impact on their loyalty (Fatima et al., 2018; Kawi & Keni, 2024; Shie et al., 2022). The higher the quality of service offered, the more likely patients will continue choosing the same provider and recommend it to others. In those studies, the indicators of service quality include the SERVQUAL dimensions but involve large-scale healthcare settings, such as the involvement of nurses and non-medical staff, inpatient facilities, and administrative systems. In the context of an independent medical practice, the findings of this study highlight that patients feel comfortable with the clinic's physical environment, the doctor's neat appearance, friendly attitude, two-way communication, and the more personal attention provided by the doctor compared to services in larger hospitals. Potentially, these results due to patients' evaluation regarding interpersonal interaction as a core value in independent practices which then associate higher perceived service quality with a trusted long-term provider. This close interpersonal relationship becomes an added value that encourages patients to return for future visits.

Furthermore, the quality of service also positively and significantly impacts patient satisfaction (H2). This result aligns with the research by Siagian et al. (2024) and Rahmatia et al. (2025) who emphasize that empathy is often the most influential dimension of satisfaction because it highlights the human and social aspects of care. However, contrasting results have been reported by Oktavian and Cokki (2025), who examined outpatient services in RSUD Ciawi and identified that although all SERVQUAL dimensions contributed to satisfaction, the most influential dimension was assurance, reflecting patients' feelings of safety, certainty, and confidence in clinical competence rather than interpersonal empathy. A similar pattern was identified by Dwijayanti, et al. (2024) in the radiology department of Buleleng Regional Hospital, who also observed that assurance and reliability showed stronger effects relative to empathy, considering the settings where patients interact with multiple trained personnel and more standardized medical procedures. These differences show that the most dominant SERVQUAL dimension may shift depending on whether healthcare delivery is physician-centered, as in independent practice; or institution-centered, as in hospital services. In independent medical practice, where services are delivered directly and personally by a single physician, empathy may be more salient because patients evaluate quality based on personal interaction, emotional sensitivity, and individual attention. In contrast, in hospital-based environments, assurance tends to become more prominent as patients rely more on institutional procedures, the presence of multiple healthcare professionals, and guaranteed standards of clinical safety.

This study also show that patient loyalty is positively influenced by patient satisfaction (H3). This aligns with prior research by Sofia (2023) and Aladwan et al. (2015), which assert that satisfaction is crucial for sustaining patient loyalty. Practically, this means that happy patients are more inclined to return and suggest the doctor to relatives or friends. his effect occurs because satisfaction represents an emotional and cognitive confirmation of expectations, which according to Service Quality Theory forms the basis of positive behavioral intentions such as repeat visits and word-of-mouth recommendations (Parasuraman et al., 1985). When service performance meets or exceeds patient expectations, the perceived value of the service strengthens affective commitment, which then develops into behavioral loyalty. However, the effect in this study was relatively small, suggesting that while satisfaction is important, it does not always guarantee loyalty. Factors such as location, consultation schedule, costs, or the availability of additional services may also affect a patient's choice to stay loyal. In other words, satisfaction is essential, but external considerations can also affect patient commitment.

Meanwhile, the quality of a service impacts patient loyalty via satisfaction as a mediating variable (H4). This result aligns with studies by Neva & Frans Assa (2021), Wulaisfan & Fauziah (2019), and Marisya et al. (2024), which suggest that satisfaction serves as a crucial bridge between service quality and patient loyalty. In reality, patients usually develop loyalty only after feeling satisfied with the care they receive. Good technical performance alone may not be enough to foster loyalty unless accompanied by positive interpersonal relationships, fulfillment of patient needs, and personal attention from the doctor.

Beyond the individual hypothesis findings, the overall explanatory strength of the model requires theoretical reflection. In behavioral healthcare research, loyalty formation is influenced not only by service experience but also by cognitive antecedents such as trust, perceived value, and prior treatment encounters (Oliver, 1999; Caruana, 2002). Service Quality Theory emphasizes that satisfaction and loyalty develop through cumulative evaluations of service encounters (Parasuraman et al., 1985), yet these constructs rarely account for the full variance of behavioral intentions because structural factors such as accessibility, continuity of care, cost, and convenience also shape patient decisions (Donabedian, 1988). Accordingly, theoretical interpretations suggest that additional constructs may be relevant for understanding loyalty formation in independent practice contexts, particularly variables related to trust, switching costs, or clinical outcomes. For practitioners, this means that strengthening interpersonal quality alone may be insufficient to ensure sustained loyalty unless supported by operational improvements such as scheduling access, location convenience, and transparent service expectations.

Overall, these findings confirm that by improving quality of the given service through empathy and strong interpersonal relationships, can lead to fostering patient satisfaction and loyalty in independent medical practice (El Garem et al., 2024; Meesala & Paul, 2018; Parasuraman et al., 1985). When prioritizing not only medical competence but also emotional sensitivity, it may also serve as an effective strategy for independent practitioners to build and sustain long-term patient loyalty.

4. CONCLUSIONS AND RECOMMENDATIONS

This study demonstrates that service quality has a significant influence on patient satisfaction and patient loyalty in independent medical practice, with satisfaction acting as a partial mediator. These findings indicate that loyalty does not arise only from technical service quality but is strengthened when patients perceive empathy, interpersonal communication, and personalized attention. Theoretically, this study extends the application of Service Quality Theory (Parasuraman et al., 1985) to physician-centered healthcare by showing that relational and interpersonal dimensions become more salient predictors of satisfaction and loyalty in single-provider settings compared with institutional environments. In this regard, empathy emerged as the most prominent dimension, highlighting the importance of emotional and interpersonal components of service evaluation in independent practice contexts.

From a managerial perspective, the results emphasize the need for independent practitioners to strengthen patient-centered strategies aimed at enhancing empathy, communication, responsiveness, and continuity of care. Practical actions may include allocating adequate consultation time, ensuring privacy, addressing concerns clearly, and maintaining consistent physician–patient relationships. These measures can reinforce patient experience and promote long-term loyalty, particularly in settings without institutional support systems.

Nevertheless, the study includes several limitations. First, the analysis was conducted in a single independent medical practice, which restricts generalizability across different provider contexts. Second, variables such as patient trust, physician reputation, and perceived cost were not examined, although they may influence satisfaction and loyalty. Future studies should involve broader samples across multiple independent practices, integrate additional behavioral or psychological variables, and compare physician-centered environments with hospital-based services to strengthen theoretical development and improve the explanatory power of the model.

REFERENCES

- Al-Abri, R., & Al-Balushi, A. (2014). Patient satisfaction survey as a tool towards quality improvement. *Oman Medical Specialty Board Review Article Oman Medical Journal*, 29(1), 3–7. <https://doi.org/10.5001/omj.2014.02>
- Aladwan, M. A., Salleh, H. S., Anuar, M. M., Alhwadi, H., & Almomani, I. (2021). The relationship among service quality, patient satisfaction and patient loyalty: Case study in Jordan Mafraq Hospital. *Linguistics and Culture Review*, 5(3), 27–40. <https://doi.org/10.21744/lingcure.v5nS3.1368>
- Alrubaiee, L., & Alkaa'ida, F. (2011). The mediating effect of patient satisfaction in the patients' perceptions of healthcare-quality patient trust relationship. *International Journal of Marketing Studies*, 3(1), 103–127. <https://doi.org/10.5539/ijms.v3n1p103>
- Amin, M., & Nasharuddin, S. Z. (2013). Hospital service quality and its effects on patient satisfaction and behavioural intention. *Clinical Governance*, 18(3), 238–254. <https://doi.org/10.1108/CGIJ-05-2012-0016>
- Arab, M., Ghazi Tabatabaei, S. M., Rashidian, A., Forushani, A. R., & Zarei, E. (2012). The effect of service quality on patient loyalty: A study of private hospitals in Tehran, Iran. *Iranian J Publ Health*, 41(9), 71–77. <https://pubmed.ncbi.nlm.nih.gov/articles/PMC3494218/>
- Arnett, J. J. (2000). Emerging adulthood: A theory of development from the late teens through the twenties. *American Psychologist*, 55(5), 469–480. <https://doi.org/10.1037/0003-066X.55.5.469>
- Badan Pusat Statistik Kota Tangerang. (2024). *Analisis Data Statistik Sektoral Kota Tangerang*. PT Sinergi Visi Utama Consultant.
- Badan Pusat Statistik Kota Tangerang. (2025). *Kota Tangerang dalam Angka 2025* (Vol. 24). BPS Kota Tangerang.
- Chaniotakis, I. E., & Lymperopoulos, C. (2009). Service quality effect on satisfaction and word of mouth in the health care industry. *Managing Service Quality*, 19(2), 229–242. <https://doi.org/10.1108/09604520910943206>
- Cronin, J. J., & Taylor, S. A. (1992). Measuring Service Quality: A reexamination and extension. *Journal of Marketing*, 56, 55–68.
- Dagger, T. S., & Sweeney, J. C. (2006). The effect of service evaluations on behavioral intentions and quality of life. *Journal of Service Research*, 9(1), 3–18. <https://doi.org/10.1177/1094670506289528>
- Dagger, T. S., Sweeney, J. C., & Johnson, L. W. (2007). A hierarchical model of health service quality: Scale development and investigation of an integrated model. *Journal of Service Research*, 10(2), 123–142. <https://doi.org/10.1177/1094670507309594>
- Deliana, M. S. (2024). Peran mediasi kepuasan pasien rawat jalan pada pengaruh kualitas layanan terhadap loyalitas pasien kefarmasian di instalasi farmasi RS FMC Bogor. *Jurnal Review Pendidikan Dan Pengajaran*, 7(4), 15291–15299. <https://doi.org/10.31004/jrpp.v7i4.36458>
- Donabedian, A. (1988). The quality of care how can it be assessed? *JAMA Network*, 260(12), 1743–1748. <https://doi.org/10.1001/jama.1988.03410120089033>

- Dwijayanti, K. A., et al. (2024). Service quality factors that influence patient satisfaction at radiology department, Buleleng Regional Hospital. *Jurnal Ilmiah Kesehatan*, 12(4), 1179–1190 <https://doi.org/10.37641/jimkes.v12i4.2722>
- El Garem, R. A. A., Fouad, A., & Mohamed, H. (2024). Factors associated with patient loyalty in private healthcare sector in Egypt. *Journal of Humanities and Applied Social Sciences*, 6(2), 181–206. <https://doi.org/10.1108/jhass-09-2023-0106>
- Fatima, T., Malik, S. A., & Shabbir, A. (2018). Hospital healthcare service quality, patient satisfaction and loyalty: An investigation in context of private healthcare systems. *International Journal of Quality and Reliability Management*, 35(6), 1195–1214. <https://doi.org/10.1108/IJQRM-02-2017-0031>
- Gunawan, A., Wahyuni, N., & Syafira Utami, A. (2020). Analisis tingkat kepuasan pelanggan terhadap pasien rawat jalan di Krakatau Medika Hospital. *Journal of Integrated System*, 3(1), 26–39. <https://doi.org/10.28932/jis.v3i1.2490>
- Hair Jr, J. F., Hult, G. T. M., Ringle, C. M., Sarstedt, M., Danks, N. P., & Ray, S. (2021). *Partial Least Squares Structural Equation Modeling (PLS-SEM) Using R: A Workbook*. Springer Nature Switzerland AG.
- Kandampully, J., Zhang, T. (Christina), & Bilgihan, A. (2015). Customer loyalty: A review and future directions with a special focus on the hospitality industry. *International Journal of Contemporary Hospitality Management*, 27(3), 379–414. <https://doi.org/10.1108/IJCHM-03-2014-0151>
- Kawi, J. S., & Keni. (2024). Peran kualitas pelayanan dalam meningkatkan kepuasan dan loyalitas pasien di rumah sakit umum daerah. *Jurnal Manajemen Bisnis Dan Kewirausahaan*, 8(2), 407–418. <https://doi.org/10.24912/jmbk.v8i2.29670>
- Kementerian Kesehatan Republik Indonesia. (2022). *Percepat Pemenuhan Tenaga Kesehatan, Kemenkes Buka Program Bantuan Pendidikan Untuk Dokter Spesialis dan Dokter Gigi Spesialis*. <https://kemkes.go.id/eng/%20percepatan-pemenuhan-tenaga-kesehatan-kemenkes-buka-program-bantuan-pendidikan-untuk-dokter-spesialis-dan-dokter-gigi-spesialis>
- Kementerian Kesehatan Republik Indonesia. (2025). *Informasi Praktek Mandiri*. <https://kemkes.go.id/id/informasi-praktek-mandiri>
- Kemp, E., Jillapalli, R., & Becerra, E. (2014). Healthcare branding: Developing emotionally based consumer brand relationships. *Journal of Services Marketing*, 28(2), 126–137. <https://doi.org/10.1108/JSM-08-2012-0157>
- Kotler, P., Shalowitz, J., & Stevens, R. J. (2008). *Strategic Marketing for Health Care Organizations: Building a Customer-Driven Health System* (1st ed.). Jossey-Bass.
- Kuwaiti, A., & Dayan, A. (2020). Factors influencing patient loyalty to outpatient medical services: an empirical analysis of the UAE's government healthcare system. *International Journal of Quality & Reliability Management*, 39, 176–203. <https://doi.org/10.1108/IJQRM-11-2020-0373>
- Manzoor, F., Wei, L., Hussain, A., Asif, M., & Shah, S. I. A. (2019). Patient satisfaction with health care services; an application of physician's behavior as a moderator. *International Journal of Environmental Research and Public Health*, 16(18), 1–16. <https://doi.org/10.3390/ijerph16183318>
- Marisya, R. O., Pasinringi, S. A., Indahwati, A. A., Rivai, F., & Hamzah, H. A. (2024). The impact of service quality on patient loyalty mediated by patient satisfaction: A study at Beriman Hospital, Balikpapan City. *Frontiers in Health Informatics*, 13(3), 9940–9950. <https://healthinformaticsjournal.com/index.php/IJMI/article/view/945>

- Meesala, A., & Paul, J. (2018). Service quality, consumer satisfaction and loyalty in hospitals: Thinking for the future. *Journal of Retailing and Consumer Services*, 40, 261–269. <https://doi.org/10.1016/j.jretconser.2016.10.011>
- Neva, K., & Frans Assa, A. (2025). The impact of service quality on loyalty through satisfaction as a mediating variable. *Journal of Educational Management Research*, 4(1), 348–362. <https://doi.org/10.61987/jemr.v4i1.908>
- Oktavian, B., & Cokki. (2025). Hubungan kualitas layanan dengan kepuasan pasien rawat jalan di RSUD Ciawi. *Jurnal Manajemen Bisnis Dan Kewirausahaan*, 9(2), 280–294. <https://doi.org/10.24912/jmbk.v9i2.33898>
- Olesen, K., & Bathula, H. (2022). A meta-analysis of the determinants of patient satisfaction and loyalty. *Health Marketing Quarterly*, 39(2), 191–210. <https://doi.org/10.1080/07359683.2022.2050000>
- Oliver, R. L. (1999). Whence consumer loyalty? *Journal of Marketing*, 63(4), 33–44. <https://doi.org/10.1177/00222429990634s105>
- Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1985). A conceptual model of service quality and its implications for future research. *Journal of Marketing*, 49(4), 41–50. <https://doi.org/10.2307/1251430>
- Pengurus Besar Ikatan Dokter Indonesia. (2012). *KODEKI 2012*. Majelis Kehormatan Etika Kedokteran Indonesia Ikatan Dokter Indonesia.
- Rahma, D. A., & Prayoga, D. (2022). Faktor yang berpengaruh terhadap loyalitas pasien rawat inap di rumah sakit: Scoping review. *Poltekita : Jurnal Ilmu Kesehatan*, 16(3), 384–391. <https://doi.org/10.33860/jik.v16i3.967>
- Rahmatia, S., Basri, M., Ismail, I., Adi, S., Nasrullah, N., & Ahmad, A. (2025). Service quality in hospital inpatient care: SERVQUAL model approach. *Health SA Gesondheid*, 30, 1–10. <https://doi.org/10.4102/hsag.v30i0.3055>
- Rina, N. A., Wahyudi, F., & Margawati, A. (2017). Perbedaan tingkat kepuasan pasien BPJS terhadap mutu pelayanan kesehatan di praktek dokter mandiri dan klinik swasta (studi kasus Kecamatan Tembalang Semarang). *Jurnal Kedokteran Diponegoro*, 6(2), 930–939. <https://doi.org/10.14710/dmj.v6i2.18603>
- Rostami, M., Ahmadian, L., Jahani, Y., & Niknafs, A. (2019). The effect of patient satisfaction with academic hospitals on their loyalty. *International Journal of Health Planning and Management*, 34(1), 726–735. <https://doi.org/10.1002/hpm.2685>
- Sastroasmoro, S., & Ismael, S. (2011). *Dasar-dasar Metodologi Penelitian Klinis* (4th ed.). Sagung Seto.
- Shie, A. J., Huang, Y. F., Li, G. Y., Lyu, W. Y., Yang, M., Dai, Y. Y., Su, Z. H., & Wu, Y. J. (2022). Exploring the relationship between hospital service quality, patient trust, and loyalty from a service encounter perspective in elderly with chronic diseases. *Frontiers in Public Health*, 10, 1–17. <https://doi.org/10.3389/fpubh.2022.876266>
- Siagian, L. T., Efendy, I., & Tarigan, R. E. (2024). Analisis kepuasan pasien rawat jalan terhadap layanan badan penyelenggara jaminan sosial di rumah sakit umum Tere Margareth Medan tahun 2023. *Jurnal Ners*, 8(2), 1379–1386. <https://doi.org/10.31004/jn.v8i2.26278>
- Sitzia, J., & Wood, N. (1997). Patient satisfaction: A review of issues and concepts. *Soc. Sci. Med.*, 45(12), 1829–1843. [https://doi.org/10.1016/S0277-9536\(97\)00128-7](https://doi.org/10.1016/S0277-9536(97)00128-7)
- Sofia, T. A. (2023). The effect of patient satisfaction on patient loyalty mediated by patient trust and hospital brand image at the Jakarta education dental and oral hospital. *Journal of Social Research*, 2(3), 765–780. <https://doi.org/doi.org/10.55324/josr.v2i3.727>
- Ware, J. E., Snyder, M. K., Wright, W. R., & Davies, A. R. (1983). Defining and measuring patient satisfaction with medical care. *Evaluation and Program Planning*, 6, 247–263. [https://doi.org/10.1016/0149-7189\(83\)90005-8](https://doi.org/10.1016/0149-7189(83)90005-8)

- Wulaisfan, R., & Fauziah, Y. (2019). Pengaruh kualitas pelayanan terhadap loyalitas pasien dengan kepuasan pasien sebagai mediasi pasien rawat inap di RSUD Dewi Sartika Kendari. *Window of Health: Jurnal Kesehatan*, 2(2), 97–105. <https://doi.org/10.33096/woh.v2i2.577>
- Zhou, W.-J., Wan, Q.-Q., Liu, C.-Y., Feng, X.-L., & Shang, S.-M. (2017). Determinants of patient loyalty to healthcare providers: An integrative review. *International Journal for Quality in Health Care*, 29(4), 442–449. <https://doi.org/10.1093/intqhc/mzx058>