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Examining The Mediating Role Of Patient Satisfaction In The Relationship Between Service Quality And Loyalty In Faith-Based Private Hospitals

Meneliti Peran Mediasi Kepuasan Pasien Dalam Hubungan Antara Kualitas Layanan Dan Loyalitas Di Rumah Sakit Swasta Berbasis Agama

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ABSTRACT
Public health services play a crucial role in fulfilling the basic needs of society, particularly in ensuring equitable access to quality healthcare. This study aims to analyze the impact of service quality on patient satisfaction and loyalty at Manado Advent Hospital, a faith-based private hospital in North Sulawesi, Indonesia. Using a quantitative research design, this study employed the SERVQUAL framework, which encompasses five dimensions: tangibility, reliability, responsiveness, assurance, and empathy. Data were collected from a sample of 208 inpatients through structured questionnaires distributed in September to October 2024. Structural Equation Modeling (SEM) was conducted using SmartPLS to test 11 proposed hypotheses. The findings indicate that four service quality dimensions, tangibility, reliability, responsiveness, and empathy, positively and significantly influence patient satisfaction, which in turn significantly affects patient loyalty. These results underscore the mediating role of patient satisfaction in enhancing loyalty, emphasizing the need for management to focus on specific quality dimensions to improve overall service performance. The study offers theoretical and practical implications for service quality improvement strategies in faith-based healthcare institutions.
Keywords: Service Quality, Servequal, Patient Satisfaction, Patient Loyalty, Faith-Based Hospital

ABSTRAK
Layanan kesehatan publik memainkan peran penting dalam memenuhi kebutuhan dasar masyarakat, terutama dalam memastikan akses yang merata terhadap layanan kesehatan yang berkualitas. Penelitian ini bertujuan untuk menganalisis dampak kualitas layanan terhadap kepuasan dan loyalitas pasien di Rumah Sakit Advent Manado, sebuah rumah sakit swasta berbasis agama di Sulawesi Utara, Indonesia. Dengan menggunakan desain penelitian kuantitatif, penelitian ini menggunakan kerangka kerja SERVQUAL, yang mencakup lima dimensi: berwujud, keandalan, daya tanggap, jaminan, dan empati. Data dikumpulkan dari sampel 208 pasien rawat inap melalui kuesioner terstruktur yang didistribusikan pada bulan September hingga Oktober 2024. Structural Equation Modeling (SEM) dilakukan dengan menggunakan SmartPLS untuk menguji 11 hipotesis yang diajukan. Temuan menunjukkan bahwa empat dimensi kualitas layanan, yaitu tangible, reliability, responsiveness, dan emphaty, secara positif dan signifikan mempengaruhi kepuasan pasien, yang pada gilirannya secara signifikan mempengaruhi loyalitas pasien. Hasil ini menggarisbawahi peran mediasi kepuasan pasien dalam meningkatkan loyalitas, menekankan perlunya manajemen untuk fokus pada dimensi kualitas tertentu untuk meningkatkan kinerja layanan secara keseluruhan. Studi ini menawarkan implikasi teoritis dan praktis untuk strategi peningkatan kualitas layanan di institusi kesehatan berbasis agama.
Kata Kunci: Kualitas Layanan, Servequal, Kepuasan Pasien, Loyalitas Pasien, Rumah Sakit Berbasis Agama

1. Introduction

Healthcare services are a fundamental right guaranteed by the state, as stipulated in Law of the Republic of Indonesia No. 17 of 2023 on Health. According to the Indonesian Ministry of Health (2009), healthcare services consist of individual or collective efforts by organizations to maintain and improve health, prevent and cure diseases, and restore the well-

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being of individuals and communities. As primary providers of these services, hospitals play a strategic role in addressing the growing public demand for high-quality healthcare. Service quality within hospitals significantly influences patient health outcomes, satisfaction levels, and ultimately, their loyalty (Rani et al., 2020; Inaray et al., 2024). The expectation for excellent service continues to rise—not only regarding facilities and medical procedures but also in terms of interpersonal and emotional care, particularly in faith-based hospitals where spiritual and emotional needs are also prioritized (Inaray et al., 2024).

The intangible nature of healthcare services heightens the importance of perceived quality, especially as patient expectations increase with the complexity and criticality of care (Ridwan & Saftarina, 2015). Various studies across education, tourism, and healthcare sectors emphasize that service quality must reflect technological readiness, human resource competence, and emotional engagement to enhance satisfaction and build long-term relationships (Kelejan et al., 2022; Rantung et al., 2023; Mandagi et al., 2024). Among widely used models to evaluate service quality, the SERVQUAL framework—comprising five dimensions: tangibility, reliability, responsiveness, assurance, and empathy—remains relevant in identifying service gaps (Parasuraman et al., 1988; Furaida et al., 2018; Tianto et al., 2022). Its effectiveness has been validated across industries, including banking, education, and healthcare (Abili et al., 2012), and continues to be applied in efforts to optimize patient-centered care (Inaray et al., 2024; Mandagi et al., 2024).

In delivering effective healthcare, factors such as accessibility, cultural appropriateness, availability of equipment, and alignment with ethical standards are critical (Mamik, 2014; Mamik, 2017; Mandagi & Tappy, 2023). Patient satisfaction, in turn, serves as a key predictor of loyalty and revisit intentions, especially when aligned with consistent service quality and emotional connection—elements commonly emphasized in faith-based institutions (Inaray et al., 2024; Mandagi et al., 2024). In addition, studies on brand gestalt suggest that the holistic experience of service—including emotional, sensory, and interpersonal interactions—significantly affects consumer trust and repeat behavior (Tumober et al., 2024; Wantah & Mandagi, 2024; Pongoh & Mandagi, 2025).

This study aims to analyze service quality at Manado Advent Hospital, a private faith-based hospital, by focusing on how each dimension of the SERVQUAL model contributes to patient satisfaction and loyalty. It builds upon prior research by shifting the focus from outpatient to inpatient care—specifically targeting BPJS (Indonesia's National Health Insurance) beneficiaries—to explore how perceived service quality shapes experiences during prolonged hospital stays. By identifying expectation-perception gaps and key satisfaction drivers, this research provides valuable input for hospital administrators to enhance service performance and foster long-term patient relationships (Abukhalifeh & Som, 2012; Kelejan et al., 2022).

Literature Review
Service Quality

Service quality in hospitals is a critical component in meeting the needs and expectations of patients and their families. Within the healthcare industry—like in any other service sector—service quality plays a fundamental role in building competitiveness (Indrawidjajanto & Syairudin, 2021). One widely adopted framework for evaluating service quality is the SERVQUAL model developed by Parasuraman et al., which outlines five key dimensions: tangibility, reliability, responsiveness, assurance, and empathy. This framework is frequently used in hospital settings to assess how well services meet patient expectations.

Previous studies have shown that the five dimensions of Parasuraman's service quality model are positively correlated with patient satisfaction (Rani et al., 2020). Hospitals that consistently meet patient expectations across these five dimensions tend to achieve higher

levels of patient satisfaction and loyalty (Mualimah et al., 2021). Each SERVQUAL dimension captures a distinct aspect of service delivery that directly contributes to the overall patient experience.

Tangibility refers to the physical evidence of service, including facilities, medical equipment, staff appearance, and communication media (Suyitno, 2017). These tangible elements shape patients' initial impressions and influence their perception of professionalism and quality. Tangibility also encompasses the cleanliness, modernity, and visual appeal of the hospital environment (Abukhalifeh & Som, 2012).

Reliability is defined as the hospital's ability to deliver promised services accurately and dependably. It includes two essential elements: the consistency of service delivery and the capacity to perform the service correctly the first time (Bahia & Nantel, 2000). A reliable hospital fulfills its promises and provides care that is both accurate and timely, contributing to patients' trust.

Responsiveness refers to the willingness and readiness of hospital staff to assist patients and provide prompt service. It reflects the institution's ability to respond quickly to patient requests, complaints, or emergency situations (Rani et al., 2020). A responsive hospital demonstrates its commitment to meeting patients' urgent and personal needs (Herlina & Jafa, 2018).

Assurance encompasses the knowledge, courtesy, and trustworthiness of staff, which together foster a sense of confidence and safety among patients (Mualimah et al., 2021). This dimension reflects how well hospital employees can reassure patients and reduce their uncertainties, particularly in situations involving health risks or complicated procedures.

Empathy involves providing individualized attention and demonstrating care for each patient's specific needs. It is reflected in the hospital's ability to build good relationships with patients, understand their unique concerns, and offer personalized care (Mualimah et al., 2021). Several studies have confirmed that empathy from hospital staff significantly contributes to increased patient satisfaction (Susanti & Riptiono, 2019; Halim, 2023; Ananda & Yuniawan, 2021; Eviana & Achmadi, 2022).

Overall, the SERVQUAL model offers a comprehensive and practical framework for evaluating hospital service quality. By identifying service gaps in these five dimensions, hospital administrators can develop targeted strategies to enhance patient satisfaction, foster loyalty, and improve overall healthcare performance.

Patient Satisfaction

Customer satisfaction is a critical aspect of service delivery in the healthcare industry, particularly in hospitals. It serves as a key indicator of a hospital's effectiveness in meeting patient needs. High-quality healthcare services play a vital role in enhancing patient satisfaction, making it essential for hospitals to continuously improve the quality of care they provide (Rani et al., 2020). Patient satisfaction is often measured through emotional responses—specifically, feelings of contentment and happiness—regarding whether or not their expectations and needs for nursing services are fulfilled (Hadi, 2017).

One of the most crucial efforts a hospital can undertake to improve patient satisfaction is the assurance of patient safety. Safety is a fundamental principle in healthcare that must be prioritized and maintained through continuous improvements. Nurses, in particular, play a central role in ensuring patient safety, as they are responsible for identifying risks and implementing the necessary measures to safeguard patients throughout the care process (Mualimah et al., 2021). In this context, patient satisfaction becomes not only a result of service quality but also a reflection of how well the hospital manages safety and risk.

Patient satisfaction is also defined as an evaluative, emotional, and affective response to the perceived quality of hospital services and the extent to which these services meet

patient expectations (Mumu, 2015). The patient's experience throughout the care journey, including their interactions with healthcare providers and the availability of necessary services, significantly influences this satisfaction. Several factors are known to contribute to patient satisfaction, including the quality of the services and products provided, the alignment between promised and actual services, psychological factors such as feelings of pride when receiving care from a reputable hospital, pricing, and the perceived efficiency of the services rendered (Hadi, 2017).

Moreover, satisfaction levels may be shaped by how consistent services are with patient expectations, the behavior and professionalism of healthcare workers, the hospital's physical environment, the cost of services, and the accuracy of the information conveyed through promotional efforts (Ole et al., 2025). Specific elements that influence patient satisfaction include the quality of facilities, accessibility, location, visual and environmental comfort, as well as effective communication between staff and patients. All of these aspects contribute to forming either a positive or negative perception of the hospital.

Patient experience plays a significant role in shaping satisfaction, as it reflects direct and personal interactions with healthcare providers. Patients may feel more satisfied when they are treated with special attention or receive personalized care. Services that are timely and affordable further enhance the patient's perception of value. Moreover, consistency in service quality and a clean, aesthetically pleasing hospital environment contribute to a more favorable experience overall.

Patient satisfaction comprises two key dimensions. First, compliance-based satisfaction relates to adherence to standardized procedures and professional ethics. It encompasses elements such as the quality of the nurse-patient relationship, patient comfort during care, the ability to make informed decisions, the technical competence of staff, and the overall safety and effectiveness of services. Second, comprehensive satisfaction includes the fulfillment of various healthcare service requirements—namely availability, accessibility, acceptability, continuity, equity, affordability, efficiency, and quality of care (Hadi, 2017). These two aspects together offer a holistic view of what influences patient satisfaction in hospitals.

Finally, customer satisfaction is closely linked to customer loyalty. However, existing research suggests that high satisfaction does not automatically lead to high levels of loyalty (Susanti & Riptiono, 2019). Factors such as utilitarian benefits, hedonic value, and the overall patient experience play crucial roles in shaping loyalty. In order to gain a competitive edge, hospitals must consistently deliver value that exceeds what is offered by competitors. Ultimately, the success of a healthcare institution lies in its ability to offer high-quality, reliable, and patient-centered services that foster both satisfaction and long-term loyalty.

Patient Loyalty

Customer loyalty plays a pivotal role in the sustainability and long-term profitability of hospitals. Patient retention is not only essential for operational continuity but also for enhancing the institution's competitive advantage. Several key factors influence patient loyalty, including the hospital's location, quality of service, and the effectiveness of its marketing communication strategies. A strategically located hospital that is easily accessible can significantly influence a patient's decision to choose and remain loyal to a particular healthcare provider. Moreover, excellent service quality—characterized by professionalism, empathy, and the reliability of healthcare personnel—can strengthen patient loyalty (Hilmi & Mulyana, 2020).

In addition to physical and service-related aspects, marketing communication plays a crucial role in shaping and sustaining loyalty. Effective marketing tools, such as advertising and promotional efforts, help build trust and maintain a connection with patients (Hilmi & Mulyana, 2020). Previous studies have explored various determinants of patient loyalty in

hospital settings, confirming that strategic communication and consistent service quality are central to retaining customers (Hilmi & Mulyana, 2020).

A study conducted at Bunda Sejati Hospital, for instance, revealed that marketing communication strategies could enhance outpatient loyalty. However, the implementation faced challenges during the COVID-19 pandemic, particularly related to human resources and social factors (Makawimbang et al., 2020; Hilmi & Mulyana, 2020; Azizah et al., 2022). These findings suggest that hospitals must consider three main elements to increase patient loyalty: strategic location, excellent service delivery, and effective communication strategies.

Beyond physical access and promotional activities, building and maintaining long-term relationships with patients is vital to fostering loyalty. Relationship intensity and relationship quality are two important dimensions that influence loyalty outcomes (Tamyiz et al., 2019; Rantung et al., 2023). Numerous previous studies have demonstrated a strong relationship between service quality and customer loyalty. For example, research by Jungle Wat confirms that service quality has a significant and positive impact on loyalty (Hilmi & Mulyana, 2020). Similarly, studies in the Indonesian hospitality industry have shown that service quality can enhance customer loyalty either directly or indirectly through the mediation of trust.

Taken together, these insights underscore the importance of a holistic approach in cultivating patient loyalty. Hospitals should not only focus on operational efficiency but also invest in strategic marketing and relationship management to create a lasting impression on patients and encourage repeat visits.

Hospital and Health Care Service

Hospitals are a vital component of national healthcare and social systems. The World Health Organization (WHO) emphasizes that hospitals must provide comprehensive services that include curative, preventive, and rehabilitative care. Furthermore, hospitals also serve as centers for medical education and research (Setyawan, 2019). To improve public health standards, hospitals strive to deliver high-quality and accessible healthcare services to the community. Their responsibilities include providing effective and efficient health services that prioritize healing and recovery while also supporting prevention and referral processes. In fulfilling these responsibilities, hospitals perform various activities, such as medical services, nursing care, medical and non-medical support services, education, research and development, community health services and referrals, financial management, and general administration (Setyawan, 2019).

Inpatient care refers to a healthcare process where patients suffering from certain illnesses are admitted and treated in designated rooms within a hospital. These inpatient rooms, often referred to as wards, are spaces where multiple patients may be accommodated at once. In modern hospitals, inpatient rooms increasingly resemble hotel rooms in terms of comfort and amenities. Admission to inpatient care is based on the physician's assessment, and patients are admitted after receiving a formal referral or order for hospitalization (Setyawan, 2019). In contrast, outpatient care refers to healthcare services provided to patients who do not require hospitalization. Hospitals not only serve as centers for inpatient care but also provide outpatient services for those who need medical consultation or treatment without staying overnight (Purnamasari & Noviyani, 2023). Outpatient services may include diagnostic tests, medical consultations, treatments, and minor procedures, all conducted within a single day. The presence of outpatient services allows hospitals to optimize infection prevention and control efforts, improve resource utilization, and enhance service efficiency (Faridath et al., 2021). Additionally, outpatient care plays a vital role in improving healthcare access and service quality for the broader community.

Hospitals are complex and integrated institutions designed to deliver comprehensive healthcare services aimed at healing, prevention, and health promotion (Purnamasari &

Noviyani, 2023; Hariyati et al., 2010). As essential elements of the public health system, hospitals encompass more than just clinical services. They include operating theaters, laboratories, administrative offices, kitchens, laundry services, pharmacies, waste and sanitation management systems, and facilities for medical education and training (Purnamasari & Noviyani, 2023).

Hypothesis Development

The dimensions of service quality outlined in the SERVQUAL model have long been recognized for their significant impact on customer satisfaction. Tangibles, which refer to the physical aspects of a service, such as equipment, facilities, and employee appearance, can strongly influence a customer's perception of service quality. Previous studies, such as those by Maulana and Sulistyawati (2021), have indicated that when service providers meet customer expectations through well-maintained and appealing physical environments, satisfaction levels are positively affected. Similarly, reliability, which reflects the ability of a service provider to consistently deliver promised services, plays a critical role in shaping customer satisfaction. As shown in studies by Maulana and Sulistyawati (2021) and Susanti and Riptiono (2019), customers who can trust a service provider to meet their needs are more likely to be satisfied. Responsiveness, or the willingness of a company to help customers and provide prompt service, also significantly impacts satisfaction (Lestari & Suwena, 2021; Poluan et al., 2022). The ability to quickly address customer needs and resolve issues leads to a higher level of customer satisfaction, as highlighted by Ananda and Yuniawan (2021). Furthermore, assurance, which involves instilling confidence through knowledgeable and courteous employees, has been shown to positively influence satisfaction (Lestari & Suwena, 2021; Wantah & Mandagi, 2024). Finally, empathy, the ability of employees to understand and care for customers' needs, plays a vital role in customer satisfaction, as customers tend to feel more valued when their concerns are understood and addressed (Maulana & Sulistyawati, 2021). Based on these insights, the following hypotheses are developed:

H1a: Tangibles have a positive influences on customer satisfaction.
H1b: Reliability has a positive influences on customer satisfaction.
H1c: Responsiveness positively influences customer satisfaction.
H1d: Assurance has a positive influences on customer satisfaction.
H1e: Empathy has a positive influences on customer satisfaction.

Service quality dimensions, as defined by the SERVQUAL model, significantly influence customer loyalty. Tangibles, such as the physical appearance of facilities and employees, are known to affect loyalty when they meet customer expectations (Maulana & Sulistyawati, 2021). Reliability, while generally linked to loyalty, may have inconsistent effects depending on factors like service type (Landari et al., 2021; Wuryandari, 2021). Responsiveness, or the ability to quickly address customer needs, has a strong positive impact on loyalty (Afendi, 2021). Assurance, reflecting the competence and confidence of service providers, also fosters loyalty by instilling trust (Tamyiz, Hurriyati & Dirgantari, 2019). Lastly, empathy enhances loyalty by building emotional connections with customers (Nathaurisia, 2014; Susanti & Riptiono, 2019; Tumober et al., 2024). These findings inform the development of the following hypothesis:

H2a: Tangibles positively influence customer loyalty.
H2b: Reliability positively influence customer loyalty.
H2c: Responsiveness positively influences customer loyalty.
H2d: Assurance positively influences customer loyalty.
H2e: Empathy positively influences customer loyalty.

Customer satisfaction is widely recognized as a key driver of customer loyalty. When customers are satisfied with a product or service, they are more likely to return and maintain long-term relationships with the company (Ananda & Yuniawan, 2021; Walean et al., 2024).

Satisfied customers are also more inclined to recommend the service to others, further strengthening brand loyalty (Susanti & Riptiono, 2019). Previous studies consistently show a strong positive correlation between satisfaction and loyalty, suggesting that companies that prioritize customer satisfaction are likely to experience higher levels of customer retention and loyalty (Maulana & Sulistyawati, 2021; Kainde & Mandagi, 2023). Therefore, the relationship between customer satisfaction and loyalty is crucial in understanding customer behavior and developing effective retention strategies. This provides the basis for this hypothesis:

H3: Customer satisfaction has a significant positive effect on customer loyalty

2. Methodology

In this study, a quantitative research design was employed, utilizing a survey methodology through the distribution of questionnaires. A quantitative approach is often chosen for its ability to provide objective, numerical data that can be systematically analyzed to address specific research questions (Siregar, 2021). This design allows for precise measurement of variables, such as customer satisfaction and service quality, in a structured manner. The advantage of this method lies in its capacity to generate generalizable data from a large sample, offering reliable insights into the research problem. The use of a survey is particularly suitable for studying perceptions of service quality, as it allows for the collection of data from a wide range of respondents efficiently and effectively.

The population for this study consists of inpatient patients at Advent Hospital in Manado. This specific population was chosen due to the focus on healthcare services and the applicability of the SERVQUAL model in evaluating service quality within the healthcare sector (Kurniawan, 2022). A total of 208 respondents were selected as the sample for this study, all of whom were inpatients at the hospital during October 2024. The sampling technique used is a non-probability convenience sampling method, which was justified by the accessibility of respondents who were receiving treatment at the hospital. The sample size of 208 was deemed appropriate based on the need for statistical power and the ability to obtain meaningful insights from a diverse group of patients, ranging in age from 14 to 74 years.

The data for this study was collected through a structured questionnaire, designed to gather quantitative data on the service quality dimensions outlined in the SERVQUAL model (Parasuraman et al., 1988). The questionnaire consisted of items assessing tangibles, reliability, responsiveness, assurance, and empathy, all in relation to the patients' experiences at the hospital. This tool was chosen due to its widespread use in similar studies, allowing for comparisons with existing literature. The data was then analyzed using Structural Equation Modeling (SEM) with the help of the SmartPLS software, which is particularly suited for analyzing complex relationships between variables.

Data collection was carried out through an online survey distributed via Google Forms. Respondents were recruited from the inpatient population at Advent Hospital, with an emphasis on ensuring diverse participation from various demographic groups. To increase the participation rate, an invitation was sent to patients upon their admission, explaining the purpose of the study and the confidentiality of their responses. To address ethical concerns, informed consent was obtained from all participants, ensuring that they were aware of their voluntary participation and the anonymity of their responses. Ethical guidelines were followed throughout the study to protect participants' privacy and maintain the integrity of the research process.

3. Results and Discussion

Respondents Demographic

Data dalam penelitian ini diambil dari responden yang pernah berobat di Rumah sakit Advent

manado mulai dari tanggal 8 oktober sampai dengan 25 Oktober 2024, adapun data yang terkumpul sebanyak 208 responden.

Table 1. Demographic Profile of the Respondents

Variable	Level	N	%
Gender	Female	124	59.6
	Male	84	40.4
Age	14-20	12	5.8
	21-30	41	19.7
	31-40	53	25.5
	41-50	38	18.3
	51-60	43	20.7
	61-74	21	10.1
Occupation	Housewife	28	13.5
	Entrepreneur	40	19.2
	Private Employee	81	38.9
	Professional	4	1.9
	Civil Servant	20	9.6
	Student	20	9.6
	Others	15	7.2
Education	Elementary School	4	1.9
	Junior High School	11	5.3
	Senior High School	96	46.2
	Bachelor's Degree	92	44.2
	Master's Degree	5	2.4
Residence	Manado City	124	59.6
	Outside Manado	84	40.4

According to the respondent details shown in Table 1, approximately 40.4% of the respondents are male (84), while 59.6% are female (124). In terms of age, 5.8% are between 14-20 years old, 19.7% are between 21-30 years old, 25.5% are between 31-40 years old, 18.3% are between 41-50 years old, 20.7% are between 51-60 years old, and 10.1% are between 61-74 years old. Regarding occupation, 13.5% are housewives, 9.6% are civil servants, 38.9% are private employees, 19.2% are entrepreneurs, 9.6% are students, 3.8% are retirees, 1.0% are farmers, and 2.4% have other occupations. In terms of education, 1.9% have completed elementary school, 5.3% have completed junior high school, 46.2% have completed high school, 44.2% hold a bachelor's degree, and 2.4% hold a master's degree. Regarding residence, 59.6% of the respondents are from Manado City, while 40.4% come from outside Manado and its surrounding areas.

Measurement Models

The measurement model will assess the validity and reliability of the relationships between the five dimensions of Service on patient satisfaction and patient loyalty. It will also examine how patient satisfaction serves as a mediating variable between Service Quality and patient loyalty. This section aims to test the structural model of the study. SmartPLS 3.2 software was used to measure this model.

The measurement model test was conducted on twenty-five indicators, and data processing was performed three times. It was found that three indicators did not meet the required loading factor criteria, being below 0.70. Two indicators from customer satisfaction (CS3, CS6) and one indicator from empathy (EM1) did not meet this threshold. Among the remaining 23 indicators, each had a loading factor above 0.70, confirming the convergent validity for all variables in the study, as shown in Figure 1 and Table 2.
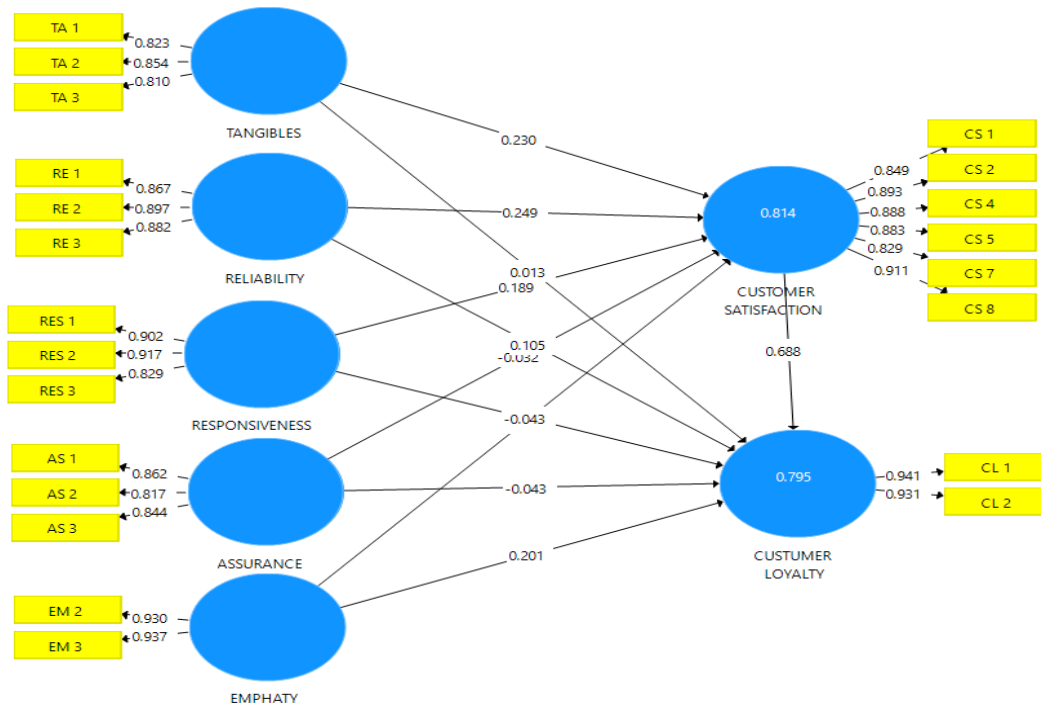

Figure 1. Measurement Model Results

The Measurement Model Test Result (Factor Loading) shows the validity of the indicators for each variable in the study. The factor loading value is used to assess how well an indicator reflects its latent variable. In general, a factor loading value ≥ 0.7 is considered to meet the criteria for indicator validity (Hair et al., 2019). Based on the results, all indicators meet the validity criteria as their factor loading values are greater than 0.7. This indicates that the indicators statistically represent their respective latent variables effectively.

Tabel 2. Factor Loading

Variabel	Indicators	Factor Loading
Assurance	AS1	0.862
	AS2	0.817
	AS3	0.844
Empaty	EM1	0.930
	EM2	0.937
Customer Satisfaction	CS 1	0.849
	CS 2	0.893
	CS 4	0.888
	CS 5	0.883
	CS 7	0.829
	CS 8	0.911

Custumer Loyalty	CL 1	0.941
	CL 2	0.931
Reliability	RE 1	0.867
	RE 2	0.897
	RE 3	0.882
Responsiveness	RES1	0.902
	RES2	0.917
	RES3	0.829
Tangibility	TA3	0.823
	TA4	0.854
	TA7	0.810

Discriminant validity is the next step in this study, where we evaluate it using the Fornell-Larcker criterion, cross-loading, and the heterotrait-monotrait ratio. To test validity, we compare the square root of the AVE (Average Variance Extracted) for each variable with the correlations between variables in the model. If the square root of the AVE is greater than the correlation between different variables, it indicates that discriminant validity is achieved. This can be seen in Table 3, which presents the results of the Fornell-Larcker criterion. The values in the table represent the correlations between each variable and the square root of the AVE on the diagonal.

Tabel 3. Fornell-larcker Criterion

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Assurance (1)	**0.841**						
Customer Satisfaction (2)	0.708	**0.876**					
Custumer Loyalty (3)	0.647	0.884	**0.936**				
Emphaty	0.777	0.826	0.786	**0.934**			
Reliability (5)	0.682	0.814	0.757	0.728	**0.882**		
Ressponsiveness (6)	0.746	0.809	0.735	0.809	0.794	**0.884**	
Tangibility (7)	0.581	0.725	0.654	0.596	0.697	0.602	**0.829**

As shown in Table 3, the square root of the AVE for the seven variables is greater than the correlations between variables, indicating that the Fornell-Larcker criterion is met in this study. The next step in testing discriminant validity involves examining the cross-loading values for each indicator. The cross-loading results should reflect the degree of correlation between each indicator within a variable and with other variables. The ideal outcome is that the correlation between indicators within the same variable should be higher compared to the correlations with indicators from other variables. Table 4 displays the results of the cross-loading test.

Tabel 4. Cross Loading

	AS	CL	CS	EM	RE	RE	TAN
AS 1	0.862	0.629	0.604	0.688	0.625	0.676	0.581
AS 2	0.817	0.509	0.452	0.552	0.485	0.578	0.445
AS 3	0.844	0.633	0.560	0.703	0.594	0.621	0.432
CL 1	0.589	0.861	0.941	0.729	0.762	0.726	0.626
CL 2	0.624	0.792	0.931	0.743	0.652	0.648	0.598
CS 1	0.567	0.849	0.701	0.667	0.693	0.677	0.703
CS 2	0.662	0.893	0.764	0.736	0.746	0.751	0.643

CS 4	0.633	0.888	0.797	0.730	0.699	0.682	0.618
CS 5	0.651	0.883	0.812	0.769	0.683	0.714	0.611
CS 7	0.588	0.829	0.742	0.668	0.716	0.658	0.616
CS 8	0.615	0.911	0.823	0.765	0.742	0.763	0.627
EM 2	0.718	0.753	0.713	0.930	0.657	0.752	0.559
EM 3	0.732	0.789	0.753	0.937	0.701	0.758	0.553
RE 1	0.553	0.688	0.670	0.616	0.867	0.661	0.575
RE 2	0.593	0.731	0.674	0.618	0.897	0.682	0.646
RE 3	0.657	0.735	0.661	0.693	0.882	0.758	0.622
RES 1	0.671	0.729	0.660	0.766	0.705	0.902	0.520
RES 2	0.692	0.752	0.705	0.784	0.762	0.917	0.557
RES 3	0.612	0.659	0.577	0.580	0.631	0.829	0.520
TA 1	0.415	0.567	0.514	0.422	0.528	0.377	0.823
TA 2	0.423	0.571	0.503	0.435	0.551	0.443	0.854
TA 3	0.588	0.655	0.599	0.605	0.641	0.651	0.810

The results of the discriminant validity test based on cross-loading, as shown in Table 3, indicate that the criteria have been met. The correlation between each indicator and the main variable is higher than the correlations between indicators of different variables. This confirms that discriminant validity is achieved.

Next, reliability testing is conducted using Cronbach's Alpha, composite reliability, and Average Variance Extracted (AVE). A variable is considered reliable if the composite reliability is greater than 0.7, and the AVE is above 0.50. The results of the reliability test for other variables can be found in Table 5. Additionally, Table 4 presents the results of the cross-loading test.

Tabel 5. Uji Reliabilitas Variabel

	Cronbach's Alpha	Composite Reliability	(AVE)
Assurance	0.794	0.879	0.707
Customer Satisfaction	0.939	0.952	0.767
Custumer Loyalty	0.859	0.934	0.877
Emphaty	0.853	0.931	0.872
Reliability	0.857	0.913	0.778
Responsiveness	0.859	0.914	0.781
Tangibles	0.774	0.869	0.688

Table 5 presents the results of the reliability test for each variable, where all outcomes exceed the recommended minimum thresholds. In the path analysis, both Cronbach's Alpha and Composite Reliability values are above 0.70, while the AVE values are greater than 0.50. This indicates that all variables in this study exhibit a high level of reliability.

Tabel 6. R-Square

	R-square
Customer Satisfaction	0.814
Custumer Loyalty	0.795

When analyzing the R-square (R^2), as shown in Table 6, it is evident that the variable customer satisfaction is explained by other variables at 81.4%, indicating a strong influence. Furthermore, the Purchase Decision variable is explained by Brand Trust and other variables at

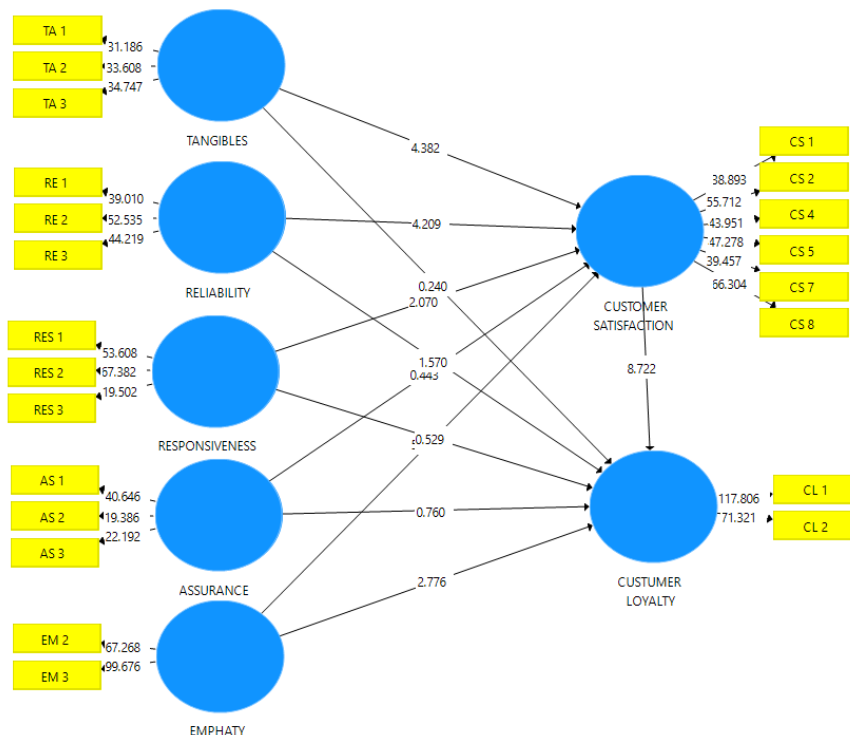79.5%, also reflecting a very strong impact.

Tabel 7. F-Square

	Customer Satisfaction	Custumer Loyalty
Assurance	0.002	0.003
Customer Satisfaction		0.429
Custumer Loyalty		
Emphaty	0.208	0.044
Reliability	0.095	0.014
Responsiveness	0.047	0.002
Tangibles	0.139	0.000

(f-square) adalah ukuran yang digunakan untuk mengukur kekuatan pengaruh antara dua variabel dalam model struktural, seperti dalam analisis PLS-SEM. Nilai **f²** menunjukkan seberapa besar perubahan dalam variabel dependen yang bisa dijelaskan oleh perubahan pada variabel independen. Menggunakan interpretasi secara umum untuk nilai **f²**: jika nilainya kurang dari 0,02, pengaruhnya dianggap sangat kecil; antara 0,02 hingga 0,15, pengaruhnya kecil; dan lebih dari 0,15, pengaruhnya besar.

Structural Model (inner model)

Dengan terpenuhinya persiaratan dalam measurement model serta validitas reabilitas. Tahap berikutnya merupakan pengujian model struktur, pada bagian ini tujuannya adalah menguji model struktur dengan melihat besar signifikansi dari sebuah koefisien jalur. Diukur dengan menggunakan boothstraping pada perangkat SmartPLS. Dapat dilihat pada gambar 2 dan table 8

Gambar 2. Structural Model Testing Result

Table 8. Hypothesis testing Results

Hypothesis	Original Sample (O)	P Values	Significant?
H1a: Tangibles -> CS	0.23	0.000	Yes
H1b: Reliability -> CS	0.249	0.000	Yes
H1c: Responsiveness -> CS	0.189	0.039	Yes
H1d: Assurance -> CS	0.032	0.658	No
H5: Empathy -> CS	0.38	0.000	Yes
H2a: Tangibles -> CL	0.013	0.811	No
H2b: Reliability -> CL	0.105	0.117	No
H2c: Responsiveness -> CL	0.043	0.597	No
H2d: Assurance -> CL	0.043	0.448	No
H2e: Empathy -> CL	0.201	0.006	Yes
H3: Customer Satisfaction -> CL	0.688	0.000	Yes

Figures 2 and Table 8 present the results of the structural model test. It was found that four out of the five elements in Quality Service have a significant impact on customer satisfaction. These four elements include Tangibility (H1) with an original sample of 0.230 and p-value of 0.000, Reliability (H2) with an original sample of 0.249 and p-value of 0.000, Responsiveness (H3) with an original sample of 0.189 and p-value of 0.039, and Empathy (H5) with an original sample of 0.380 and p-value of 0.000. These results indicate that these four variables have a positive and significant impact on customer satisfaction. On the other hand, the Assurance variable (H4) with an original sample of -0.035 and p-value of 0.658 does not have a significant effect on customer satisfaction. When examining the relationship between the Quality Service variables and customer loyalty, the results showed that Tangibility (H6) with an original sample of 0.013 and p-value of 0.811, Reliability (H7) with an original sample of -0.043 and p-value of 0.448, Responsiveness (H8) with an original sample of -0.043 and p-value of 0.597, and Assurance (H9) with an original sample of -0.032 and p-value of 0.658 all have an insignificant effect on loyalty. However, Empathy (H10) with an original sample of 0.201 and p-value of 0.006 shows a significant impact on customer loyalty. Furthermore, Customer Satisfaction (H11) has a significant influence on customer loyalty, with an original sample of 0.688 and p-value of 0.000.

Mediating Effect

Although the statistical results show that one out of the five components of Quality Service does not have a direct effect on customer loyalty, it is found that when mediated by customer satisfaction, it significantly influences the relationship between several Quality Service variables and customer loyalty. This can be observed as Tangibility, Reliability, Responsiveness, and Empathy, when mediated by customer satisfaction, have a significant effect on loyalty. Likewise, with customer satisfaction as a mediator, there is a clear positive and significant impact on loyalty. This is illustrated in Table 9.

Tabel 9. Mediating Effect

	Original Sample (O)	P Values	Significant?
Emphaty -> CS -> CL	0.261	0	Yes
Reliability -> CS -> CL	0.171	0.001	Yes
Responsiveness -> CS -> CL	0.13	0.041	Yes

Tangibles -> CS -> CL	0.158	0	Yes

Next, Tables 10 and 11 present the results of the Goodness of Fit Model and Q-Square tests. The purpose of the Goodness of Fit Model test is to assess the accuracy and distribution of the sample when performing statistical analysis of the actual data. On the other hand, the Q-Square test measures how well the observed values of endogenous variables are represented. If the Q-Square value is greater than 0, it indicates that the observed values are considered to be good

Tabel 10. Goodness of Fit Model

	Saturated Model	Estimated Model
SRMR	0.061	0.061
d_ULS	0.950	0.950
d_G	0.669	0.669
Chi-Square	820.876	820.876
NFI	0.807	0.807

Tabel 11. Uji *Q-Square*

	SSO	SSE	Q² (=1-SSE/SSO)
Assurance	624.000	624.000	
Customer Satisfaction	1248.000	477.868	0.617
Custumer Loyalty	416.000	135.261	0.675
Emphaty	416.000	416.000	
Reliability	624.000	624.000	
Responsiveness	624.000	624.000	
Tangibles	624.000	624.000	

In the measurement of the Goodness of Fit Model, the obtained results show that the model's NFI estimation value is 0.807, which indicates that the closer the value is to 1, the more accurate the sample data distribution is statistically. As for the Q-Square test, the criteria are as follows: a result of 0 indicates low impact, 0.25 indicates moderate impact, and 0.5 indicates high impact (Hair et al., 2019). From the processed data, it was found that the endogenous variables, customer satisfaction and loyalty, both have values above 0.5, which means they have a high impact based on the statistical test.

Discussion

Results in this study indicates that the service quality dimensions, Tangibility (H1), Reliability (H2), Responsiveness (H3), and Empathy (H5), have a significant positive influence on customer satisfaction. Service quality has a major impact on customer satisfaction; when services meet customer expectations, they are more likely to feel satisfied. Previous studies have shown that customer satisfaction can be enhanced with high-quality service (Ananda & Yuniawan, 2021). This can be attributed to the availability of high-quality materials and support tools in healthcare services. The better the technology and equipment used in healthcare services, the greater the impact on outcomes when analyzing health issues, which in turn boosts customer satisfaction with the results of the service provided. Reliability, quick response times, and empathy can be defined as the ability to understand and feel the emotions of others, all of which enhance service quality. One of the key factors in influencing customer satisfaction is the empathy of employees. Previous studies have shown that employee empathy positively affects customer satisfaction (Susanti & Riptiono, 2019; Halim,

2023; Ananda & Yuniawan, 2021).

The results of this study also show that Assurance (H4) does not significantly affect customer satisfaction. There is also a theory suggesting that Assurance does not influence customer satisfaction. The research results indicate that high levels of customer satisfaction do not automatically lead to high customer loyalty. This suggests that the Assurance dimension of service quality does not always play a decisive role in customer satisfaction. Other theories also state that Assurance does not significantly impact customer satisfaction (Sari, Koto & Marviana, 2022). On the other hand, the study highlights that customer satisfaction has a significant influence on customer loyalty, as seen in Hypothesis (H11). An important factor in cultivating customer loyalty to a product or service is customer satisfaction. When customers are satisfied with the quality of the product or service, they are likely to continue using it and recommend it to others (Susanti & Riptiono, 2019). Research by Hilmi & Mulyana (2020) shows that service quality positively and significantly impacts customer loyalty.

Similarly, the role of service providers, in this case, healthcare facility staff, becomes important. When customers receive excellent service from the healthcare provider, starting from registration to the examination room, the psychological impact on the customer, whether they are the patient or a companion, is more positive. This aligns with Rahim et al. (2021), who describe positive emotional responses to the service received. A positive correlation is also found in healthcare service quality, as illustrated by the customer's own sensations (Mandagi et al., 2024).

Customer satisfaction with high-quality service provides a psychological experience that can influence subsequent actions, making service users more likely to recommend and use the service again (Kelejan, Walean, Soewignyo & Mandagi, 2022). The impact of customer satisfaction with health services is profound, with significant implications (Inaray, Soewigny, Sumanti & Mandagi, 2024; Mandagi et al., 2024). This study also found that not all service quality variables have a significant impact on customer loyalty, including the hypotheses of Tangibility (H6), Reliability (H7), Responsiveness (H8), and Assurance (H9). However, among the hypotheses linking the five service quality elements to loyalty, only the Empathy dimension (H10) has a positive and significant effect on customer loyalty. This indicates that the service quality dimensions do not directly influence customer loyalty. An interesting finding is that location does not significantly affect customer loyalty, despite the positive and significant impact of service quality (Hilmi & Mulyana, 2020).

On the other hand, there is a theory that suggests Responsiveness does not always guarantee customer satisfaction, as other factors, such as experiential marketing and service quality, also play an important role. The theory that Responsiveness does not affect customer satisfaction has long been debated in marketing literature (Afendi, 2021; Ananda & Yuniawan, 2021). Furthermore, some theories suggest that Assurance does not affect customer satisfaction. The findings indicate that high levels of customer satisfaction do not automatically lead to high customer loyalty, implying that the Assurance dimension of service quality does not always determine customer satisfaction. Other theories also state that Assurance does not have a significant impact on customer satisfaction (Sari et al., 2022).

Table 8 shows that four out of five service quality dimensions, Tangibility, Reliability, Responsiveness, and Assurance, do not have a significant and direct effect on customer loyalty. Instead, the impact is indirect, as these four variables show a positive and significant effect on loyalty when customer satisfaction serves as a mediator. This supports previous research, which suggests that the benefits of services directly felt by customers act as a predictor for their intention to reuse a product or service (Lebo & Mandagi, 2023). Not only does customer satisfaction influence the desire to reuse a service, but it also serves as a critical link that significantly impacts customer loyalty (Rahman et al., 2022).

4. Conclusions

This study reveals that several dimensions of service quality, specifically tangibility, reliability, responsiveness, and empathy, have a significant positive impact on customer satisfaction in the healthcare sector. It also highlights that customer satisfaction plays a pivotal role in driving customer loyalty, whereas assurance did not show a significant direct effect on either satisfaction or loyalty. These findings emphasize the importance of high-quality service, advanced medical equipment, and empathetic staff in building lasting relationships with healthcare customers, ultimately contributing to their long-term loyalty.

Despite the valuable insights provided, this study has certain limitations. The primary limitation lies in the potential biases introduced by the respondents' educational backgrounds, which may have influenced their understanding and responses to the survey questions. Additionally, the research was limited to healthcare services and may not be applicable to other industries without further validation.

Future studies could explore the relationship between service quality and customer loyalty in different service sectors to provide broader insights. Additionally, further research could focus on the role of technology adoption in improving service quality and its subsequent impact on customer satisfaction and loyalty. Investigating the influence of employee training and development on customer perceptions of service quality could also add depth to understanding how service quality dimensions affect consumer behavior.

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