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THE INFLUENCE OF SERVICE QUALITY AND COST ASPECTS ON PATIENT SATISFACTION WITH HOSPITAL IMAGE AS A MEDIATING VARIABLE (A STUDY AT RSUD BUMIAU, BREBES REGENCY)

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Abstract

This preliminary study aims to examine the influence of service quality and cost aspects on patient satisfaction, with hospital image as a mediating variable. The study was conducted at RSUD Bumiayu, Brebes Regency, using a quantitative, descriptive-correlational approach with a cross-sectional survey method. A total of 30 outpatient and non-BPJS inpatient respondents were selected using purposive sampling. The model was tested using Partial Least Squares Structural Equation Modeling (SEM-PLS) via the SmartPLS application. The analysis showed that service quality had a significant effect on hospital image ($\beta = 0.730$; $p < 0.001$) and an indirect effect on patient satisfaction through hospital image (indirect effect = 0.391). Hospital image exerted a strong direct effect on patient satisfaction ($\beta = 0.536$; $p < 0.01$), whereas the direct effect of service quality on satisfaction was relatively weaker ($\beta = 0.244$). The cost aspect had only a minor influence on hospital image ($\beta = 0.165$) and patient satisfaction ($\beta = 0.136$). The R^2 values of 0.754 for hospital image and 0.755 for patient satisfaction indicate strong predictive power of the model. These findings emphasize the importance of improving service quality as a key determinant of institutional image and patient satisfaction.

Keywords: service quality, cost aspects, patient satisfaction, hospital image, SEM-PLS

INTRODUCTION

Patient satisfaction is a primary indicator in assessing the quality of hospital services and is one of the components in the Minimum Service Standards (SPM) set by the government. The Decree of the Minister of Health No.129/Menkes/SK/II/2008 stipulates that patient satisfaction levels must reach at least 90% for both outpatient and inpatient services. However, data indicate that patient satisfaction in Indonesia remains relatively low, with only 42.8% satisfaction reported by some studies (Hayati, 2022).In the context of healthcare services, service quality and financial aspects are frequently examined as determinants of patient satisfaction. The SERVQUAL theory developed by Parasuraman (1985) has become a widely accepted framework for measuring service quality, comprising five main dimensions: tangibles, reliability, responsiveness, assurance, and empathy. Various studies have shown mixed results regarding the effect of service quality on patient satisfaction. For example, a study in California indicated a strong relationship between the two (Lim et al., 2018), while research in Medan found only the 'tangibles' dimension to be significantly influential (Hayati, 2022).

Furthermore, financial aspects such as cost transparency, ease of payment, and availability of payment options affect patient perception and comfort. Research suggests that a clear and inclusive financing system can enhance hospital image and strengthen patient loyalty (Katoni & Sijabat, 2023). Hospitals with sound financial conditions tend to offer better service quality (Akinleye et al., 2019). However, evidence from Siloam Hospital indicates that the impact of pricing on patient satisfaction may not be significant, depending on patients' economic background (Katoni & Sijabat, 2023).

Hospital image is another critical factor examined in this study. A positive image can build patient trust even before receiving direct services (Nguyen & Leblanc, 2001). Several studies have shown that hospital image acts as a mediator between service quality and patient satisfaction (AlOmari, 2022). This highlights the importance of fostering a positive public perception and reputation, particularly for regional hospitals such as RSUD Bumiayu, the focus of this study.

In Bumiayu, private hospitals tend to be perceived more favorably than RSUD Bumiayu. This is evident from online public reviews and the low bed occupancy rate (BOR) in several wards, which fail to meet the Ministry of Health's optimal standards (Kemenkes RI, 2011). Public complaints about service speed and additional charges for BPJS patients have also become critical issues affecting the hospital's image (Tribowo, 2025).

To address these challenges, RSUD Bumiayu has introduced several innovations, including the SIPADI AYU application and a patient shuttle service (Prasetyo, 2025). Nevertheless, few studies have comprehensively examined how service quality and cost aspects affect patient satisfaction while considering hospital image as a mediating variable.

Hence, this study aims to fill this gap in the literature by empirically testing the influence of service quality and financial aspects on patient satisfaction, while assessing the mediating role of hospital image. This research is expected to contribute to the development of strategies for enhancing the quality of healthcare services, especially in government-owned regional hospitals.

LITERATURE REVIEW AND HYPOTHESIS FORMULATION

SERVQUAL Model

The most relevant model for this study is the SERVQUAL model developed by Parasuraman, Zeithaml, and Berry (1988), which serves as a framework to measure service quality based on customer perceptions. The core of the model is that service quality can be evaluated by identifying the gap between customers' expectations prior to receiving the service and their perceptions after the service experience. The smaller the gap, the higher the perceived service quality.

In practice, SERVQUAL evaluates service quality across five key dimensions:

- Tangibles: Physical facilities, equipment, and the appearance of personnel. In hospitals, this includes cleanliness of wards, the condition of medical instruments, and staff uniforms.
- Reliability: The ability to perform promised services dependably and accurately. This includes diagnostic accuracy and timely delivery of treatment.
- Responsiveness: The willingness and promptness of staff to help patients and respond to requests, such as waiting times or physician responsiveness.
- Assurance: The knowledge, competence, and courtesy of staff that inspire trust and confidence. This is reflected in how clearly procedures and medical information are conveyed.
- Empathy: Providing personalized care and attention to patients, including friendliness, active listening, and emotional support.

The SERVQUAL questionnaire asks patients to rate each dimension using two separate scales: expectations (how good the service should be) and perceptions (how good the service actually was). The score is the difference between perception and expectation. A positive gap indicates the service exceeded expectations, while a negative gap shows unmet expectations.

Equity Theory

Equity Theory was developed by J. Stacy Adams in 1965 through his work "Inequity in Social Exchange." This theory posits that people are motivated based on whether they perceive fairness in the exchange of inputs and outcomes. Fairness does not only involve receiving high rewards but also whether those rewards are considered proportional to the effort exerted, especially in comparison to others.

According to this theory, input refers to what individuals contribute, such as time, effort, skills, and dedication, while outcome refers to what they receive, such as salary, recognition, or promotion. Individuals compare their input–outcome ratio to that of others. If they perceive the ratio to be fair (equity), they feel satisfied. If not (inequity), it leads to dissatisfaction, prompting changes in behavior or attitudes.

Corporate Image Theory

The Corporate Image Theory explains how public perception of an organization is formed and how this image influences public attitudes and behaviors toward the organization. This concept originates from the work of Boulding (1956) in his book *"The Image: Knowledge in Life and Society."* Boulding emphasized that all human behavior is shaped by mental images of the world, including organizations.

This concept was later adopted and developed in the fields of management and marketing by Dowling. Dowling argued that corporate image is not merely a visual representation such as a logo or slogan, but a comprehensive perception that encompasses values, reputation, behavior, and communication expressed by the organization toward the public.

According to Dowling (1986), corporate image consists of several components:

- Corporate identity: This includes visual and symbolic elements such as the organization's name, logo, color schemes, and communication style.
- Corporate personality: The values and characteristics associated with the organization, such as professionalism, integrity, or social concern.
- Corporate communication: The way in which the organization delivers messages to the public, both through media and direct interactions.
- Organizational behavior: How the organization treats its clients, responds to social issues, and handles complaints.

Expectancy-Disconfirmation Theory

The Expectancy-Disconfirmation Theory (EDT) is one of the principal models used to explain customer satisfaction, including in healthcare services. The theory was first proposed by Oliver (1980), who stated that satisfaction arises from a comparison between customers' initial expectations and the actual service performance they receive.

EDT asserts that satisfaction is the result of the discrepancy between expectations and perceived performance (Thompson & Yarnold, 1995). If performance exceeds expectations (positive disconfirmation), the customer is likely to feel satisfied. Conversely, if performance falls short (negative disconfirmation), dissatisfaction occurs.

Meta-analyses have confirmed that the disconfirmation paradigm has been a foundational framework in consumer satisfaction studies over the last four decades (Schiebler et al., 2025). In summary, the theory proposes that satisfaction is a function of the gap between perceived performance and expectations. This is consistent with Oliver's later work (1997), which states that satisfaction occurs when the service meets or exceeds prior expectations.

Service Quality

Service quality is the fundamental element in delivering patient-centered healthcare. In the service sector, it is defined as the extent to which a provided service meets customer expectations. Parasuraman, Zeithaml, and Berry (1988) stated that service quality is the result of a comparison between customer expectations before receiving the service and their perceptions afterward. When perceptions exceed expectations, satisfaction occurs. In the healthcare context, service quality includes not only the technical competence of medical personnel but also emotional and psychological aspects experienced by patients.

The SERVQUAL model has become the dominant tool for evaluating service quality across various service industries. Its five core dimensions—tangibles, reliability, responsiveness, assurance, and empathy—have been widely applied in healthcare research (Andaleeb, 2001). A study in hospitals in Bangladesh found that reliability and responsiveness of healthcare workers significantly influenced patient satisfaction.

Tjiptono and Chandra (2019) emphasized that high service quality significantly enhances a hospital's public image, which in turn boosts patient satisfaction and loyalty. However, a study by Sinollah (2019) showed that SERVQUAL dimensions (tangibles, reliability, responsiveness, assurance, and empathy) did not significantly influence customer satisfaction, indicating that service quality may have a limited duration of influence on satisfaction formation.

In contrast, Aladwan (2021) demonstrated that service quality has a direct and positive effect on patient satisfaction and loyalty. Similarly, Kartikasari & Dewanto (2014) found that improved service quality builds greater trust and satisfaction among hospital patients.

Cost Aspects

Cost aspects are a critical component of healthcare services that directly impact accessibility, continuity of care, and patient satisfaction. In public hospitals, financial aspects involve not only the total amount paid by patients but also the transparency, clarity, and perceived fairness of pricing structures.

Although service quality has a more immediate impact on patient satisfaction, healthcare costs still play a crucial role in shaping hospital image (AlOmari, 2022). While pricing may not always significantly affect satisfaction, patients with positive perceptions of service affordability tend to exhibit greater loyalty toward the hospital (Kantoni & Sijabat, 2023).

In a study by Andaleeb (2001), fairness in service charges relative to quality delivered was found to be a key determinant of satisfaction. This was further supported by Prawirohardjo et al. (2018), who concluded that transparent and accountable financial practices enhance patient trust, especially in government hospitals with a strong social mission.

Hospital Image

Hospital image refers to the overall perception or mental representation formed by patients and the public about a healthcare institution. This image is shaped not only through direct patient experience but also through word-of-mouth communication, reputation, and both formal and informal information shared by the hospital.

Kotler (2016) defined image as a set of beliefs, ideas, and impressions that a person holds toward an object. In hospitals, image is shaped by service quality, staff attitudes, facilities, the physical environment, and administrative processes. When a hospital succeeds in building a positive image, it enhances trust and patient loyalty. The more favorable a hospital's image in patients' perceptions, the higher their level of satisfaction (Anfal, 2020).

Nguyen & Gaston (2001) found that a healthcare institution's image plays an important mediating role between service quality and patient satisfaction. Patients who perceive the hospital positively are more likely to tolerate minor service shortcomings and still report high levels of satisfaction.

According to Wu (2011), hospital image also acts as a quality signal, particularly for new patients who have no prior experience. Hospitals with a strong image are considered more trustworthy, competent, and professional. In the public healthcare system, a positive image is vital to securing community support and ensuring hospital sustainability.

As highlighted by Wijaya, Banun, & Rahmat (2021), both service quality and patient satisfaction significantly influence hospital image. This aligns with expectancy-disconfirmation theory (Oliver, 1980), which explains how consumer perceptions shape satisfaction based on whether their expectations are met or exceeded.

Patients with positive perceptions of the hospital tend to form strong emotional attachments and trust. They believe the hospital is capable of meeting or even exceeding their expectations, increasing the likelihood of repeat visits and long-term loyalty (Katoni & Sijabat, 2023).

Patient Satisfaction

Patient satisfaction is a critical metric for evaluating hospital service quality and the effectiveness of the healthcare system. It reflects how well hospital services align with patient expectations and determines loyalty, retention, and the likelihood of reuse.

Oliver (1997) defined satisfaction as an affective response that results from comparing initial expectations to the actual experience of a product or service. In healthcare, this includes evaluations of medical treatment, facilities, cost, comfort, and interactions with healthcare professionals.

In Bangladesh, Andaleeb (2001) found that empathy, speed of service, and doctors' communication skills were the most influential factors on satisfaction. This highlights the significant impact of non-technical service dimensions on patient experience.

In Indonesia, Tjiptono (2014) identified three primary drivers of patient satisfaction: service quality, cost perception, and institutional image. Hospitals that deliver reliable services, practice financial transparency, and maintain a positive public image tend to have higher patient satisfaction rates.

Bachruddin, Efendy, & Yuniati (2024) concluded that technical competence, service access, efficiency, continuity, safety, interpersonal relationships, and comfort all contribute to patient satisfaction. Lim (2018) further established the link between hospital service quality, patient satisfaction, hospital utilization, and financial performance.

Conversely, a study by Silalahi, Fitriani, & Megawati (2019) found no significant relationship between nurse friendliness or empathy and patient satisfaction, indicating variability in factors influencing satisfaction across contexts.

This study proposes seven hypotheses to be tested:

- *H1: Service quality has a positive effect on patient satisfaction.*
- *H2: Cost aspect has a positive effect on patient satisfaction.*
- *H3: Hospital image has a positive effect on patient satisfaction.*
- *H4: Service quality has a positive effect on hospital image.*
- *H5: Cost aspect has a positive effect on hospital image.*
- *H6: Hospital image mediates the relationship between service quality and patient satisfaction.*
- *H7: Hospital image mediates the relationship between cost aspect and patient satisfaction.*

RESEARCH METHODS

The hypotheses above are represented in the research model as follows:

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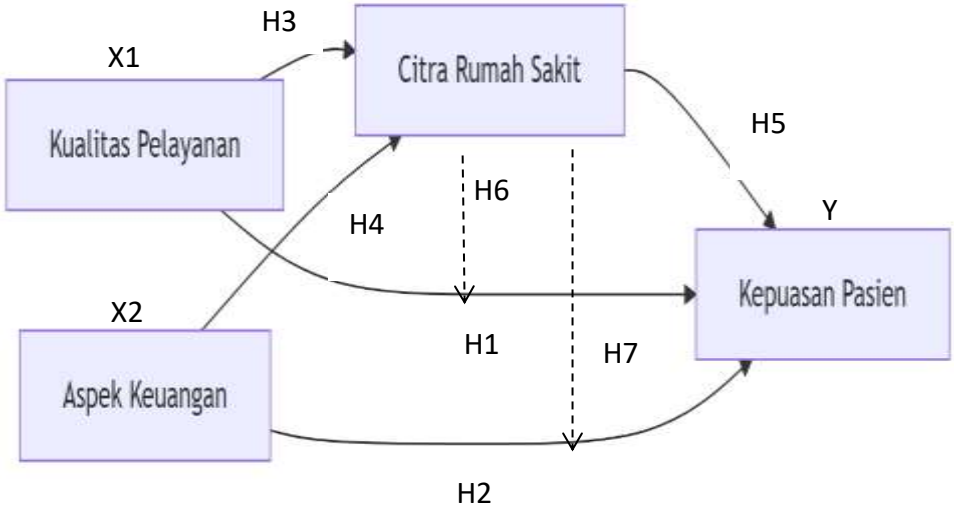

Figure 1. Research Model

This study employed a quantitative observational analytic design to examine the influence of service quality and cost aspects on patient satisfaction with hospital image as a mediating variable. The research was conducted at RSUD Bumiayu, located in Brebes Regency, Central Java, Indonesia.

The study population comprised all non-BPJS (general) inpatients who had received at least one episode of care between January and July 2025. Sampling was conducted using a non-probability purposive sampling technique. Inclusion criteria were general inpatients who were willing to participate and able to complete the questionnaire independently.

The minimum required sample size was estimated using the inverse square root method (Kock & Hadaya, 2018) with the following formula:

$$n = \left(\frac{2.486}{0.20}\right)^2 \approx 155\ respondents. \quad (1)$$

However, for this preliminary study, 30 respondents were selected.

Data Analysis

Both primary and secondary data were collected. Primary data were obtained through questionnaires distributed to outpatients and inpatients using self-pay (non-BPJS) schemes. The primary data collection method involved a closed-ended Likert-scale questionnaire (1 = strongly disagree to 5 = strongly agree).

The questionnaire measured four variables:

- **Service Quality** (based on SERVQUAL dimensions),
- **Cost Aspect**,
- **Hospital Image**, and
- **Patient Satisfaction**.

The data were analyzed using SEM-PLS (Structural Equation Modeling – Partial Least Squares) and are summarized in the table below:

Table 1. Data Analysis Using SEM-PLS Application

SEM-PLS Stages	Assessed Componen	General Rules / Criteria	Brief Explanation
Measurement Model Evaluation (Outer Model)	Convergent Validity (AVE)	AVE ≥ 0.5	AVE measures the proportion of indicator variance explained by

			the latent construct. If AVE > 0.5, at least 50% of the indicator variance is explained, indicating consistency in measuring the same concept (Hair et al., 2021).
	Factor Loading	Ideal ≥ 0.7; minimum ≥ 0.6	Loading indicates the strength of the relationship between indicators and constructs. A value ≥ 0.7 indicates high representativeness. A value between 0.6–0.7 is still acceptable for exploratory research (Chin, 1998).
	Composite Reliability (CR)	CR ≥ 0.7	CR evaluates internal consistency among indicators within a construct. It is more accurate than Cronbach's Alpha as it considers the contribution of each indicator (Hair et al., 2021).
	Cronbach's Alpha	≥ 0.7 (good); ≥ 0.6 (acceptable)	Alpha measures the initial reliability for assessing indicator consistency. Although commonly used, CR is deemed more appropriate in SEM-PLS as Alpha assumes indicator equivalence (Taber, 2018).
Structural Model Evaluation (Inner Model)	R-Square (R^2) Value	0.75 (strong), 0.50 (moderate), 0.25 (weak)	R^2 indicates the explanatory power of exogenous constructs on endogenous constructs. A higher R^2 reflects a better structural model, e.g., the extent to which Service Quality and Financing explain

			Patient Satisfaction (Hair et al., 2021).
	Path Coefficient	t-statistic > 1.96 or p-value < 0.05	Path coefficients indicate the direction and strength of relationships between constructs. The t or p values show whether these effects are statistically significant (Hair et al., 2021).
Mediation Test	Direct and Indirect Path Testing	Check path coefficient significance	To test whether Hospital Image mediates the relationship between Service Quality and Patient Satisfaction. Both direct and indirect paths should be tested (Baron & Kenny, 1986; Zhao et al., 2010).

RESULTS AND DISCUSSION

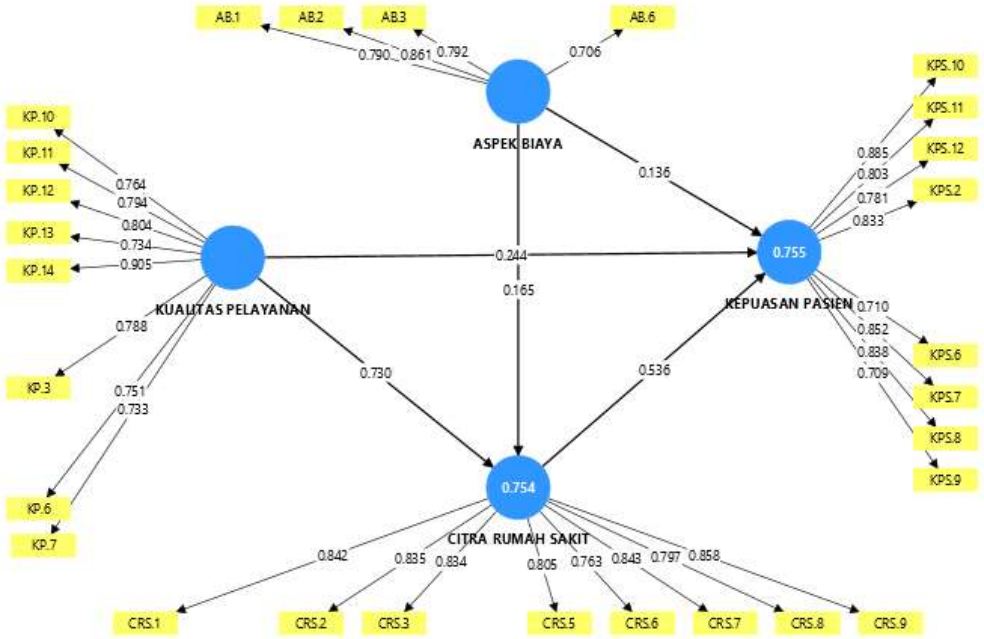

Figure 2. Graphical Output SEM PLS

SEM-PLS graphical analysis revealed relationships among the latent variables: Service Quality, Cost Aspect, Hospital Image, and Patient Satisfaction.

From the 45 questionnaire items, 17 with loadings below 0.7 were eliminated. The elimination did not affect construct validity, as they were sufficiently represented by remaining items ≥ 0.7.

Key Findings:

- Service Quality → Hospital Image: Significant positive effect (β = 0.730). H4 supported.

- **Cost Aspect → Hospital Image**: Positive but weak effect (β = 0.165). H5 supported.
- **Service Quality → Patient Satisfaction**: Positive direct effect (β = 0.244), but weaker than indirect. H1 supported.
- **Cost Aspect → Patient Satisfaction**: Weak effect (β = 0.136). H2 supported.
- **Hospital Image → Patient Satisfaction**: Strong direct effect (β = 0.536). H3 supported.

R^2 Values:

- Hospital Image = 0.754
- Patient Satisfaction = 0.755
- Indicating strong predictive capacity of the model.

Indirect Effects:

Path coefficients - List

	Path coefficients
ASPEK BIAYA -> CITRA RUMAH SAKIT	0.165
ASPEK BIAYA -> KEPUASAN PASIEN	0.136
CITRA RUMAH SAKIT -> KEPUASAN PASIEN	0.536
KUALITAS PELAYANAN -> CITRA RUMAH SAKIT	0.730
KUALITAS PELAYANAN -> KEPUASAN PASIEN	0.244

Figure 3. Path Coefficients

- **Service Quality → Hospital Image → Patient Satisfaction**: Indirect effect = 0.391 → strong mediation. H6 supported.
- **Cost Aspect → Hospital Image → Patient Satisfaction**: Indirect effect = 0.089 → weak mediation. H7 supported.

These results confirm that hospital image plays a crucial mediating role, especially for the effect of service quality on patient satisfaction.

CONCLUSION

This study reveals that service quality significantly influences hospital image and indirectly enhances patient satisfaction through this image. Although service quality also has a direct positive effect on satisfaction, it is not as strong as the indirect effect via hospital image.

Conversely, the cost aspect does not significantly impact either hospital image or patient satisfaction directly. This suggests that patient perceptions are more influenced by service experience than by financial factors. Hospital image proves to be a critical mediating variable, strengthening the link between perceived service quality and satisfaction.

Practical Implication: Hospitals should focus on consistently improving service quality as a strategic effort to build a positive institutional image, which ultimately enhances patient satisfaction.

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