THE RELATIONSHIP OF HOSPITAL WEBSITE INFORMATION QUALITY AND PATIENT SATISFACTION IN EAST JAVA

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INFORMATION	ABSTRACT
Correspondence caren.theresia1@gmail.com **Keywords:** Digital Healthcare Service, Google Review ratings, Hosopital Website, Online Services, Patient Satisfaction.	*Objective: the impact of online services and administrative information on patient satisfaction in Type C and D hospitals in East Java Province, using Google Review ratings as a measure of satisfaction.* *Methods: This quantitative study employs a descriptive-analytic design with a cross-sectional approach. The sample consists of Type C and D hospitals in East Java that have official websites and at least 20 Google Review ratings. Data were collected through content observation of hospital websites and extraction of ratings and comments from Google Reviews.* *Results: The findings indicate that Google Review ratings do not significantly influence the appearance or content of hospital websites. The success of digital services is more affected by organizational factors, technological aspects, and internal policies that support the implementation and development of information technology. Website design quality and user experience are critical factors in the development of hospital digital services.* *Conclusion: The study recommends that hospitals enhance website design quality and digital services with strong support from internal policies. Evaluating the effectiveness of digital services should involve more objective and comprehensive indicators to better improve patient satisfaction in the current digital era.*

INFORMASI	ABSTRAK
	Tujuan: Meneliti dampak layanan daring dan informasi administrasi terhadap kepuasan pasien di rumah sakit Tipe C dan D di Provinsi Jawa Timur, dengan menggunakan rating *Google Review* sebagai ukuran kepuasan. Metode: Penelitian kuantitatif ini menggunakan desain deskriptif-analitik dengan pendekatan potong lintang (cross-sectional). Sampel terdiri dari rumah sakit Tipe C dan D di Jawa Timur yang memiliki situs web resmi dan minimal 20 ulasan di *Google Review*. Data dikumpulkan melalui observasi konten situs web rumah sakit dan pengambilan rating serta komentar dari *Google Review*. Hasil: Temuan menunjukkan bahwa rating *Google Review* tidak secara signifikan memengaruhi tampilan maupun konten situs web rumah sakit. Keberhasilan layanan digital lebih dipengaruhi oleh faktor organisasi, aspek teknologi, dan kebijakan internal yang mendukung penerapan serta pengembangan teknologi informasi. Kualitas desain situs web dan pengalaman pengguna merupakan faktor penting dalam pengembangan layanan digital rumah sakit. Kesimpulan: Studi ini merekomendasikan agar rumah sakit meningkatkan kualitas desain situs web dan layanan digital dengan dukungan kuat dari kebijakan internal. Evaluasi efektivitas layanan digital sebaiknya menggunakan indikator yang lebih objektif dan komprehensif guna meningkatkan kepuasan pasien di era digital saat ini.

INTRODUCTION

In today's digital era, online services in hospitals play a crucial role in enhancing service quality. Official hospital websites not only provide information but also facilitate patients' access to administrative services. With clear and accessible online services and administrative information, patient satisfaction tends to increase (Lim et al. 2018).

In addition to healthcare services, the overall quality of a hospital is also judged by the efficiency of its non-clinical functions such as administrative processes and communication management. The hospital's website plays a crucial role as the primary channel for providing key information like doctors' schedules, online appointment booking, and various other patient services. (Fadilla and Setyonugroho 2021).

East Java Province, characterized by its large population and fast-growing healthcare industry, faces a pressing need to enhance the digital services offered by its hospitals. Nonetheless, further investigation is required to explore how the presence of online features on hospital websites correlates with patient satisfaction, as measured through ratings on Google Reviews. (Ferreira et al. 2023).

Online services, particularly online patient registration, have become key innovations in hospital administration. These systems can reduce queues and speed up administrative processes, resulting in a better patient experience (Ikhyana et al. 2023). Additionally, they allow for the fast and transparent delivery of information related to costs, procedures, and health education.

Hospital websites act as official channels for providing patients with information about services, doctor schedules, locations, and administrative procedures (Ikhyana et al. 2023). The success of digital information delivery is also influenced by staff competency in information management and digital literacy (Sitorus and Chairulnissa 2023). Therefore, hospital websites must meet certain quality standards.

Website quality is assessed based on usability, information quality, and service interactivity. Usability refers to ease of navigation, information quality involves accuracy and completeness, and service interactivity includes features such as online registration and responsiveness to users.

Effective hospital websites should include essential elements such as detailed hospital profiles and their legal status—for instance, accreditation information—alongside comprehensive lists of services, doctor schedules, and functionalities like online registration. Additionally, providing service cost estimates, clear contact information, and interactive location maps enhances user convenience. Ensuring the website features a responsive design and robust security measures is crucial to foster patient trust and ease of access to digital healthcare services (Syaputra and Amalia 2023).

In evaluating patient satisfaction, Google Reviews serve as a powerful tool. These reviews allow patients to share real-time feedback and ratings based on their personal experiences, offering a direct and credible source of information from the users themselves (Al Kuwaiti et al. 2023). Beyond mere numerical scores, Google Reviews capture nuanced insights into aspects such as the friendliness of staff, efficiency of service, hospital cleanliness, and clarity of communication—all important facets that influence patient perceptions.

While inherently subjective, this patient-generated data remains highly valuable for assessing service quality in the digital age (Kholili, Nuraini, and Prananingtias 2022). Moreover, the public accessibility and continuous updating of Google Reviews provide an advantageous resource for hospitals to monitor community perceptions dynamically. When combined with official data published on hospital websites, these reviews form a comprehensive picture for analyzing healthcare service quality from multiple angles.

Digital administrative services, such as online registration, greatly support hospital operational efficiency and improve patient satisfaction. Patients no longer need to register in person, reducing queues and wait times (Ikhyana et al. 2023). These systems also help hospitals manage patient data electronically and support digital transformation.

Previous studies have shown a significant relationship between the availability of online services and patient satisfaction (Umiati, Murti, and Adriani 2021). However, in the context of Indonesian hospitals, particularly in East Java, few studies have directly examined the influence of administrative information on websites on patient satisfaction ratings.

This study aims to analyze whether there is a relationship between the quality of administrative information on official hospital websites and the level of service satisfaction, as reflected in Google Review ratings of hospitals in East Java Province.

METHOD

This study is a descriptive and analytical quantitative research using a cross-sectional approach. The aim is to assess the quality of information on official hospital websites and analyze its relationship with service satisfaction based on Google Review ratings.

Research Location and Time

The research was conducted in East Java Province. Data collection took place in June 2025 through online searches of hospital websites and Google Reviews.

Population and Sample

The population in this study includes all Type C and D hospitals in East Java Province. Sampling was conducted using predetermined inclusion and exclusion criteria. Inclusion criteria consisted of hospitals with active, publicly accessible official websites and a minimum of 20 reviews on Google Review to ensure the reliability and representativeness of patient satisfaction data. Exclusion criteria included hospitals without official websites, with fewer than 20 reviews, or with no available rating data. The sampling method used was total sampling, in which all members of the population meeting the inclusion criteria were included for analysis.

Data Collection Technique

Data were collected from two primary sources: official hospital websites and Google Reviews. Website data were obtained through direct observation of each official website that met the inclusion criteria. Observed aspects included the availability of general information such as hospital profiles, vision and mission statements; a list of available services and doctor schedules; accessible contact information and addresses; online registration features; and information on service costs or patient service procedures.

The second source was Google Review, which provides user-generated ratings in the form of star ratings and written reviews on Google Maps/Google Review platforms for each hospital. In this study, only the numerical star ratings were used as quantitative data for further analysis; user comments were not analyzed qualitatively. This approach was used to assess public perceptions of hospital services based on accessible digital sources.

Research Instruments

The research instrument focused on analyzing the availability and quality of online services and administrative information on official hospital websites. The instrument used several key indicators based on the following theoretical foundations:

1. Hospital Profile Includes the history, vision and mission, and organizational structure, which serve as a formal representation of the institution. Presenting this profile enhances the hospital's credibility and transparency (Fadilla and Setyonugroho 2021).
2. Types of Services Indicators such as inpatient care, outpatient care, emergency services, and medical support emphasize the importance of complete online service information to provide patients with certainty regarding available facilities (Lim et al. 2018).
3. Types of Services Indicators such as inpatient care, outpatient care, emergency services, and medical support emphasize the importance of complete online service information to provide patients with certainty regarding available facilities (Zeithaml, Berry, and Parasuraman 1988).

4. Cost and Administrative Information Includes service fees, BPJS processes, and administrative procedures, which are essential for improving transparency, reducing patient uncertainty, and increasing satisfaction (Ikhyana et al. 2023).
5. Online Registration Availability of online registration reflects ease of access, a key aspect of digital service quality, enabling patients to register at any time without visiting the hospital in person (DeLone and McLean 2003).
6. Medical Bed Availability (TTM) Information on bed availability is crucial for patient care planning and fosters trust through transparency (Kholili, Nuraini, and Prananingtias 2022).
7. Public Education Health education articles and videos enhance public understanding and align with health communication theory, which emphasizes the role of digital education in disease prevention (Noar 2006).
8. Contact and Location Information Includes hospital addresses and call center services, which ensure accessibility and effective communication between patients and hospitals (Lim et al. 2018).
9. Interactive Features Tools such as live chat, complaint forms, and FAQs improve user engagement and provide quick responses, positively affecting customer satisfaction (Gefen and Straub 2004).
10. Regular Information Updates Ensures relevance and strengthens user trust in the website as a valid and reliable information source (Hong, Thong, and Tam 2004).

The following is an instrument for assessing the quality of website information which is compiled based on several theories and adjustments to hospital services in the form of a table:

Table 1. instrument for assessing the quality of website information.

No.	Information Category	Sub-Indicator	Score				
			0	1	2	3	4
1	Hospital Profile	History, Vision, Mission, Organizational Structure					
2	Types of Service	Inpatient, Outpatient, Emergency Department, Medical Support					
3	Doctor Schedules	Updated, Complete, Scheduled					
4	Costs and	Service rates, BPJS, Administrative					

No.	Information Category	Sub-Indicator	Score				
			0	1	2	3	4
	Administrative Information	procedures (registration, payment), excellent services					
5	Online Registration	Availability of online registration link/form, ease of use, registration confirmation					
6	Medical bed Availability	Available and latest Bed availability information					
7	Public Education	Health articles, e-brochures, educational videos					
8	Contact and Location Information	Address, email, call center, location map					
9	Interactive Features	Live chat, online complaints, FAQ					
10	Regular Information Updates	Information updated <last 3 months					

A scoring system ranging from 0 to 4 was employed to evaluate the presence and completeness of information on hospital websites. A score of 0 indicates that the information is entirely absent, while a score of 1 reflects minimal and inadequate information. A score of 2 suggests that the information is available but incomplete, whereas a score of 3 signifies that the content is reasonably complete and clearly presented. The highest score, 4, denotes comprehensive and fully adequate information that meets user needs.

The research instrument used in this study was developed not only based on key indicators supported by relevant theoretical frameworks but also underwent rigorous validity and reliability testing.

The validity test ensured that each item accurately measured the intended aspects aligned with the research objectives. In other words, the instrument was validated to assess specific variables such as hospital profiles, types of services, doctor schedules, administrative cost information, and other relevant features. The reliability test was conducted to confirm the instrument's consistency and stability over time, ensuring that repeated measurements under similar conditions would yield dependable and consistent results.

Patient satisfaction with hospital services was measured using data from Google Reviews. Two main components were analyzed: (1) the average rating on a five-star scale, which represents the overall perception of service quality from the patients' perspective; and (2) the total number of reviews, which reflects the extent to which the ratings represent a broad range of patient experiences. A higher volume of reviews enhances the accuracy and credibility of the satisfaction assessment.

Data Analysis Techniques

The data in this study were analyzed using descriptive statistics and Pearson correlation analysis to examine the relationship between the quality of information on official hospital websites (measured by a total score ranging from 0 to 40) and hospital ratings from Google Reviews. The analysis was conducted in several stages:

1. Data Collection

   Data were gathered using an assessment instrument in the form of a scoring table, where each website feature was rated on a scale from 0 to 4 to evaluate the completeness and quality of the information presented.

2. Data Processing

   The collected data were processed quantitatively by calculating total scores, average scores, and the percentage of information availability for each indicator and sub-indicator. This allowed for a structured overview of content quality across hospital websites.

3. Descriptive Statistical Analysis

   Descriptive statistics were employed to summarize and present the general characteristics of the data. This included:

   i. Average scores for each indicator
   ii. Frequency distribution of scores
   iii. Percentage of scores within specific categories

   This step provided a straightforward and interpretable overview of how complete and accessible the hospital website information was.

4. Correlation Analysis

To explore potential relationships between variables, such as the association between information completeness and patient satisfaction, a correlation test was conducted. Depending on the data distribution, either Pearson or Spearman correlation coefficients were used.

5. Result Interpretation

   The correlation coefficient (r) was interpreted to determine the direction and strength of the relationship, while the significance value (p-value) was used to assess whether the observed relationship occurred by chance or held statistical significance.

RESULTS

The results of the validity and reliability tests indicate that the measurement instrument used in this study is both valid and reliable for assessing the research variables. This confirms that the instrument appropriately captures the intended dimensions and produces consistent outcomes, making it suitable for use in evaluating the quality of hospital website information and its association with patient satisfaction.

Table 2. The results of the instrument validity and reliability testing.

Item	Correlation Coefficient (r)	Significance Value (p-value)
Item 1	0.817	< 0.01 (Significance)
Item 2	0.742	< 0.01 (Significance)
Item 3	0.832	< 0.01 (Significance)
Item 4	0.926	< 0.01 (Significance)
Item 5	0.913	< 0.01 (Significance)
Item 6	0.926	< 0.01 (Significance)
Item 7	0.833	< 0.01 (Significance)
Item 8	0.926	< 0.01 (Significance)
Item 9	0.360	< 0.01 (Significance)
Item 10	0.625	< 0.01 (Significance)

The results of the instrument validity and reliability testing confirm that all items used in this study are valid indicators for measuring the intended variables. This is supported by item-total correlation values exceeding 0.3 and significance levels below 0.01, indicating both statistical relevance and internal consistency.

Linear Regression Analysis

A simple linear regression was conducted to assess the relationship between Google Review ratings and hospital website presentation. The results indicate that Google Review ratings have no statistically significant effect on website appearance (β = -0.080, p = 0.556). This suggests that variations in review ratings do not account for changes in website presentation.

Table 3. Linear Regression Analysis

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	32.284	3.567		9.052	0.000
	Rating Review	-0.111	0.187	-0.080	-0.593	0.556

Pearson Correlation Test

Pearson correlation analysis between the Google Review rating and website presentation yielded a correlation coefficient of -0.080 with a p-value of 0.556. The correlation is weak and negative, and statistically insignificant, as the p-value exceeds the conventional threshold of 0.05. Thus, no meaningful linear relationship was found between user satisfaction (as measured by ratings) and the perception of website quality within the sample.

Table 4. Pearson Vorrelation Test

		website presentation	Review Rating	Unstandardized Residual
website presentation	Pearson Correlation	1	-0.080	0.997**
	Sig. (2-tailed)		0.556	0.000
	N	56	56	56
Review Rating	Pearson Correlation	-0.080	1	0.000
	Sig. (2-tailed)	0.556		1.000
	N	56	56	56
Unstandardized Residual	Pearson Correlation	0.997**	0.000	1
	Sig. (2-tailed)	0.000	1.000	
	N	56	56	56

This implies that changes in Google Review ratings are not clearly associated with variations in website presentation. It may also reflect the presence of other more influential factors or indicate that the two variables are unrelated in this context.

Chi Square Test

The Chi-Square test produced a Pearson Chi-Square value of 4.281 with 4 degrees of freedom and a p-value of 0.369. As the p-value exceeds 0.05, the null hypothesis cannot be rejected. This indicates that there is no statistically significant association between review rating categories and website appearance categories.

Table 5. Chi Square Test

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	4.281[a]	4	.369
Likelihood Ratio	4.844	4	.304
Linear-by-Linear Association	1.644	1	.200
N of Valid Cases	56		

DISCUSSION

The findings from regression and statistical analyses show that Google Review ratings do not significantly influence the visual presentation or content quality of hospital websites in East Java Province. These results are consistent with prior studies suggesting that the success of digital service implementation in healthcare is not solely dependent on user perceptions or online ratings, but rather on organizational, technological, and policy-driven factors.

Integrating Implementation Models in Healthcare practice

Bhadauria, Mahapatra and Nerur, (2020), through the Unified Theory of Acceptance and Use of Technology 2 (UTAUT2), emphasize that user motivation, technological infrastructure, and organizational support are central to digital healthcare adoption. These factors are more influential in determining technology use than user ratings alone. Similarly, Oliveira et al. (2016) highlight the significance of data security, accessibility, and IT implementation policies as key determinants of successful digital service adoption in healthcare.

Digital Patient Experience and Website Design

According to Sánchez-Tarragó et al. (2021), digital patient experience relies heavily on the quality of interaction design and the accuracy of information provided through hospital websites. Therefore, website presentation should prioritize usability and functional design, rather than depend on external popularity indicators like user ratings.

Organizational and Policy Factors

Brunner et al. (2017) argue that successful technology adoption in healthcare systems is largely shaped by government policies, staff training, and organizational capacity—factors not readily captured through public online reviews

Digital Service Evaluation and Performance Measurement

Martínez-Pérez, De La Torre-Díez and López-Coronado (2013) underscore the importance of continuous evaluation using performance indicators that reflect actual interaction and user satisfaction. Sole reliance on online ratings, which tend to be subjective, does not provide a complete or reliable assessment of service quality.

Theoretical and Practical Implications

The findings suggest that hospitals should focus on developing comprehensive digital service strategies grounded in models such as TAM (Technology Acceptance Model) and UTAUT2, particularly emphasizing perceived usefulness, ease of use, and organizational support. While online ratings provide useful feedback, they should not be the sole determinants of website quality or digital service performance.

Although Google Review ratings are often seen as a proxy for patient satisfaction and hospital performance, this study demonstrates their limited influence on the quality of online services and administrative information on hospital websites. A plausible explanation is that website development and digital service availability are more influenced by internal policy decisions, technology adoption levels, and patient outreach strategies.

CONCLUSION

This study concludes that Google Review ratings do not have a significant impact on the presentation of hospital websites in East Java Province. The effectiveness of digital health services is more closely linked to organizational factors, technological readiness, and internal policies that support technology implementation. User experience and website design quality remain critical components in developing successful digital services. For more accurate evaluation, digital service performance should be assessed through objective and comprehensive indicators rather than relying solely on subjective online ratings. Hospitals need to implement well-planned, organization-supported strategies for the development of digital services. This includes investing in staff training and conducting continuous assessments to enhance both the quality and efficiency of digital healthcare delivery.

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