Evaluation of Hospital Website Quality on User Satisfaction

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Abstract: The rapid development of information technology and the internet has driven digital transformation across various sectors, including healthcare services. Hospital websites now play a crucial role as communication platforms and sources of fast, accurate, and accessible information for the public. This study aims to evaluate the quality of the RSU Lirboyo Kediri website based on user satisfaction using the WebQual 4.0 method, which includes three main variables: usability, information quality, and service interaction quality. This method was selected because it effectively measures users' overall perceptions of a website's performance and effectiveness. Data were collected through questionnaires containing 23 indicators and analyzed using the Python programming language. The results indicate that all three variables significantly influence user satisfaction, suggesting that the RSU Lirboyo website still requires improvement in certain aspects. Therefore, it is recommended that the website administrators enhance the site's development, particularly in the area of information quality, to improve service delivery and overall user satisfaction.

INTRODUCTION

The rapid development of information technology (IT) and the internet has brought significant changes to various aspects of human life. Today's digital transformation not only provides convenience in communicating, but also influences the lifestyle of modern society which tends to be more practical and efficient in obtaining information, especially in the era of globalization. Information technology has become the main driver in supporting the operational activities of organizations, institutions, and large companies, as explained by (Natalia Krisnawati et al., 2019), that the contribution of IT is very significant in supporting the sustainability and efficiency of an organization's work.

One of the advantages of information technology is its ability to access and disseminate information without time and location restrictions, because users are now connected globally via the internet network. Each page provides links for navigation between pages or between servers globally (Kurniawati et al., 2024)

Web-based technology is used to convey information to the public (Ristyawan et al., 2024). In Indonesia itself, this trend is increasing with the entry of various sectors into the digital realm. Based on records from the Indonesian Internet Service Providers Association (APJII), internet users in Indonesia have reached 221 million people, with a penetration rate reaching 79.5%. This figure reflects the high dependence of society on the internet as a medium of information and communication.

One of the important media in digital transformation is a website. A website not only functions as a digital representation of an institution, but also as an effective and efficient communication tool. In the context of public services, websites play an important role in providing information needed by the public quickly and easily. Aspects of performance and page load speed are also important indicators for assessing website quality (Arni et al., 2023). The use of modern technology and data management are just part of the digital transformation. More than that, this transformation can help improve the quality of health services and make patients feel more satisfied through better communication and direct involvement in the care process (Sobon, 2023). Modern communication today refers to electronic communication that uses the internet, which presents various new technologies to make it easier to communicate and build relationships more effectively ((jaz et al., 2025). Some websites also require users to enter information or subscribe to fully access certain features (Saputra, Sucipto & Andriyanto, 2022).

In the health care sector, hospital websites are a strategic communication tool between hospitals and the public. Websites are not only used to convey general information about hospitals, but also as a means of promoting services, initial consultation media, and information references such as doctor specializations, practice schedules, and emergency service information. According to (Maria & Sutabri, 2023), a good hospital website must have quality information that is always updated and easily accessible to users.

RSU Lirboyo, Kediri City is one of the hospitals in Kediri City that has developed a website with the address rsulirboyo.com. This website is designed to facilitate the delivery of information and establish communication with patients and

other stakeholders. In addition, this website also acts as a media for hospital services. However, in its implementation, the RSU Lirboyo website still experiences various obstacles and has not been utilized optimally. One of the main problems is the lack of information updates that cause users to have difficulty in obtaining the latest information related to hospital services.

Other deficiencies identified on the website include: lack of information such as doctor schedule menus, specialist services that do not yet have information, lack of updated information regarding services, thus affecting users in accessing the website. In addition, the RSU Lirboyo website also experienced technical problems due to malware attacks and high levels of spam that caused unexpected errors (bugs).

Seeing these problems, an evaluation of the quality of the RSU Lirboyo website needs to be carried out to maintain and improve the quality of its digital information services. One method that can be used to convey website quality from a user perspective is WebQual 4.0. This method was developed to measure website quality based on user perceptions through three main variables, namely effectiveness of use (usefulness), service interaction (quality of service interaction), and accuracy of information (quality of information). According to (Setiawati et al., 2022), the application of the WebQual 4.0 method can identify various problems and produce useful suggestions for website development. However, such approaches, sensitive to data interoperability and dynamically changing environments (Park et al., 2025).

WebQual 4.0 itself uses a total of 23 questions covering the three variables to obtain a comprehensive picture of user perceptions of the evaluated (Bela Damanik et al., 2024). After the data from the measurements are collected, further analysis can be carried out using the Python programming language. Python is a popular programming language that greatly supports statistical data analysis through libraries such as Pandas, NumPy, and Matplotlib (Jawad et al., 2022). By using Python, the process of data processing and visualization can be carried out more efficiently, so that the results of the analysis can be presented informatively and easily understood.

The use of the WebQual 4.0 method has been widely applied in similar studies. For example, (Saputra & Andriyanto, 2022) conducted an evaluation of the Academic Information System website of Nusantara PGRI Kediri University and found that the variables of quality of use, quality of information, and quality of interaction did not have a significant effect on user satisfaction. Another study by (Sari & Pangaribuan, 2018) on the Online Payment service also showed that the quality of interaction did not have a significant effect on customer satisfaction. A similar thing was also found in a study by (Villa Waru & Zulkifli, 2023) on the SMKN 3 Soppeng website, where the quality of information and service interactions had not met user expectations. Similar studies have shown that evaluations help users assess how useful a website is, so that organizations can improve their services to users (Az Zahra & Suryatiningsih, 2024).

Based on this background, this study aims to evaluate the quality of the RSU Lirboyo website in Kediri City on user satisfaction using the WebQual 4.0 method. This evaluation is expected to reveal various problems faced by users when accessing the hospital website. The results of this study will be used to provide data-based recommendations to hospital management in order to develop and improve the quality of their digital services. By improving the quality of the website, it is hoped that services to patients and the public can become better, more efficient, and more responsive to health information needs in the digital era.

RESEARCH METHODS

This research begins with the problem identification process, followed by designing a questionnaire based on the WebQual 4.0 method, to the data analysis stage. The three main dimensions used in WebQual include aspects of usability, information quality, and service interaction quality. The complete flow of the research stages is shown in Figure 1.

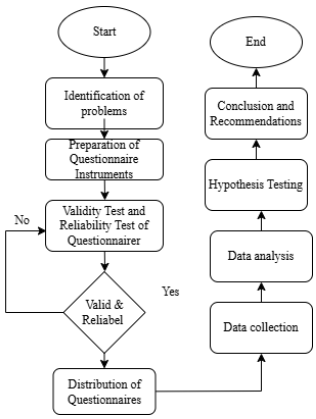

Figure 1. Research flow

1. Identification of problems

The main problem is the lack of updates or delays in updating information on the Lirboyo Hospital website in Kediri City and the incomplete quality of the information.

2. Preparation of Questionnaire Instruments

The instrument used in this study was a questionnaire with a Likert scale of 1 to 5, which was designed to measure user perceptions of the website, as shown in Table 1.

Table 1. Skala Likert

Skala	Information
1	Strongly Disagree
2	Disagree
3	Neutral
4	Agree
5	Strongly Agree

3. Test Validity and Reliability

Data processing was done using Python. The questionnaire is considered valid if r count ≥ r table, and reliable if Cronbach's Alpha ≥ 0.7.

4. Questionnaire Distribution

The questionnaire was distributed to users of the RSU Lirboyo website in Kediri City, including patients, families, staff, and the general public. The number of samples used in this study was 100 respondents.

5. Data collection

The results of data collection via Google Form were exported to Excel, then analyzed using the Python programming language.

6. Data Analysis

Data analysis includes classical assumption tests, multiple linear regression, and calculation of the coefficient of determination (R^2) to test the relationship between variables and measure how much the independent variables explain the dependent variable.

7. Hypothesis Testing

Hypothesis testing consists of T-test (Partial) and F-test (Simultaneous). T-test is used to evaluate the effect of one independent variable on the dependent variable directly, without considering other variables. Meanwhile, F-test is conducted to assess the effect of independent variables simultaneously on the dependent variable by comparing the calculated F value and Ftable.

RESULTS AND DISCUSSION

1. Test Validity dan Reability

1.1. Test Validity

Table 2. Result Test Validity

Indikator	R Hitung	R Tabel	Sig.	Information
Usability Quality – X1				
KP1	0,6674	0,1966	0,00	Valid
KP2	0,7305	0,1966	0,00	Valid
KP3	0,5588	0,1966	0,00	Valid
KP4	0,7102	0,1966	0,00	Valid
KP5	0,7535	0,1966	0,00	Valid
KP6	0,7453	0,1966	0,00	Valid
KP7	0,7402	0,1966	0,00	Valid
KP8	0,7356	0,1966	0,00	Valid
Information Quality – X2				
KI1	0,7315	0,1966	0,00	Valid
KI2	0,6312	0,1966	0,00	Valid
KI3	0,5716	0,1966	0,00	Valid

Information Quality – X2				
KI4	0,7324	0,1966	0,00	Valid
KI5	0,7552	0,1966	0,00	Valid
KI6	0,7626	0,1966	0,00	Valid
KI7	0,6719	0,1966	0,00	Valid
Service Interaction Quality – X3				

KIL1	0,7458	0,1966	0,00	Valid
KIL2	0,6124	0,1966	0,00	Valid
KIL3	0,5719	0,1966	0,00	Valid
KIL4	0,7224	0,1966	0,00	Valid
KIL5	0,5961	0,1966	0,00	Valid
KIL6	0,8113	0,1966	0,00	Valid
KIL7	0,7412	0,1966	0,00	Valid
KIL8	0,7633	0,1966	0,00	Valid
User Satisfaction - Y				
KPG 1	0,6442	0,1966	0,00	Valid
KPG2	0,7464	0,1966	0,00	Valid
KPG3	0,7308	0,1966	0,00	Valid
KPG 4	0,6265	0,1966	0,00	Valid
KPG5	0,8102	0,1966	0,00	Valid

Based on Table 2, the results of the validity test show that all question items in each variable have a calculated r-value greater than the r-table, so they are declared valid. By using a significance level of 0.05 and the number of respondents as many as 100 people, the r-table value for degrees of freedom (df) = 98 is 0.1966.

1.2. Test Reability

Table 3. Result Reability

Variables	Cronbach's alpha	Cronbach's alpha yang diisyaratkan	Information
Usability Quality	0,898	>7	Realiabel
Information Quality	0,872	>7	Realiabel
Service Interaction Quality	0,892	>7	Realiabel
User Satisfaction	0,863	>7	Realiabel

Table 2 shows the results of the reliability test which shows that the Cronbach's Alpha value for all variables X1, X2, and X3 exceeds 0.7. This indicates that the instruments used in this study are consistent and reliable.

2. Data Analysis

2.1 Test Normality

Table 4. Result Test Normality

Hasil Uji One-Sample Kolmogorov-Smirnov	
Kolmogorov-Smirnov Z	0.0957
Asymp. Sig. (2-tailed)	0.2998
Residuals are normally distributed (failed to reject H0)	

Based on Table 4, the results of the normality test, a significance value of 0.299 was obtained. Because this value is greater than 0.05, it can be concluded that the data analyzed has a normal distribution.

2.2 Test Multicollinearity

Table 5. Result Test Multicollinearity

Hasil Uji Multikolinearitas		
Variabel	**Tolerance**	**VIF**
Usability Quality	0.261	3.829
Information Quality	0.244	4.104
Service Interaction Quality	0.369	2.707
Dependent Variable : User Satisfaction		

Referring to Table 5, the usability variable has a tolerance value of 0.261 and a VIF value of 3.829. For the information quality variable, the tolerance value is 0.244 with a VIF of 4.104. While the service interaction quality variable shows a tolerance value of 0.369 and a VIF of 2.707. Based Based on the results of the multicollinearity test in the table, all independent variables have a tolerance value ≥ 0.10 and VIF ≤ 10. This means that the regression model does not experience multicollinearity problems and has met the required assumptions.

2.3 Test Heteroscedasticity

=== TABEL KORELASI SPEARMAN (RHO) ===

	Usability	Information Quality	Service Interaction Quality	Unstandardized Residual
Usability	1	0.832	0.726	0.075
Information Quality	0.832	1	0.751	0.062
Service Interaction Quality	0.726	0.751	1	0.042
Unstandardized Residual	0.075	0.062	0.042	1

=== TABEL SIGNIFIKANSI (P-VALUE) ===

	Usability	Information Quality	Service Interaction Quality	Unstandardized Residual
Usability	0	0	0	0.458
Information Quality	0	0	0	0.539
Service Interaction Quality	0	0	0	0.678
Unstandardized Residual	0.458	0.539	0.678	0

Figure 2. Result Test Multicollinearity

Based on Figure 2, it can be seen that the significance value for the usability variable is 0.458, which exceeds the threshold of 0.05. This indicates that there are no symptoms of heteroscedasticity in the variable. Furthermore, the information quality variable has a significance value of 0.539, which is also greater than 0.05, so it can be concluded that there is no heteroscedasticity in the variable. Meanwhile, the significance value for the service interaction quality variable is recorded at

0.678, which is again greater than 0.05, which means that no heteroscedasticity problems are found in this variable.

2.4 Multiple Linear Regression Test

Table 6. Result Multiple Linear Regression Test

	Unstd. Coef. (B)	Std. Error	Std. Coef. (Beta)	t	Sig.
CONSTANT	1.567	1.299	0.0	1.207	0.23
KP	0.147	0.073	0.224	2.004	0.048
KI	0.245	0.092	0.309	2.669	0.009
KIL	0.218	0.057	0.361	3.843	0.0

Based on Table 6, the three variables usability (0.048), information quality (0.009), and service interaction quality (0.000) have significance values below 0.05, so all hypotheses are accepted. This means that all three have a significant effect on user satisfaction.

3. Uji Hipotesis

3.1 Test F

TABEL UJI F SIMULTAN

	Sum of Squares	DF	Mean Square	F	Sig.
Regression	764.243	3	254.748	70.171	0.0
Residual	348.517	96	3.63		
Total	1112.760	99			

Figure 3. Result Test F

Based on Based on the results shown in Figure 3, That above data processing findings indicate that the statistically meaningful probabilityis 0.000 less than 0.05 and that the value of F calculation = 70.171 is greater than the F table = 2.70. Consequently, the hypothesis is accepted, andthe Usability, Information Quality, and Service Interaction Quality variables together have a significant influence on the User Satisfaction variable.

3.2 Test T

Table 7. Test T

Hipotesis	t hitung	t tabel	Sig. < 0,05	Hasil
X1 → Y	2.004	1.986	0.048	Positif
X2 → Y	2.669	1.986	0.009	Positif
X3 → Y	3.843	1.986	0.000	Positif

Interpretation of Table 7, The t-test (two-tailed) was used to measure the partial influence of each independent variable (X1, X2, X3) on the dependent variable (Y), with a significance level of 5% and 96 degrees of freedom, resulting in a t-table

value of 1.986. All variables of Usability, Information Quality, and Service Interaction Quality have a t-count above the t-table and a significance value below 0.05, indicating a significant influence on user satisfaction.

4. Coefficient of Determination Test

Table 8. Results of Determination Coefficient Test

Model Summary	Nilai
R	0.829
R Square	0.687
Adjusted R Square	0.677
Std. Error of the Estimate	1.905

Based on the table 8 results of the determination coefficient values listed in the table, the R square value is 0.687 or equivalent to 68.7%. This figure indicates that website quality, which includes Usability, Information Quality, and Service Interaction Quality, contributes 68.7% to User Satisfaction. Meanwhile, the remaining 31.1% is influenced by other factors outside the variables analyzed in this study.

CONCLUSIONS AND RECOMMENDATIONS

Conclusion

Based on the results of research conducted on the quality of the Lirboyo Hospital website in Kediri City using the WebQual 4.0 method which includes three main variables, namely usability quality, information quality, and interaction quality, it was concluded that these three variables have a significant effect on user satisfaction.

Recommendations

To improve the quality of service, the website manager of RSU Lirboyo Kota Kediri is required to regularly update content, improve navigation, and add interactive features to increase user satisfaction.

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