


Analysis of the Effect of Website Quality on Customer Satisfaction Using the Webqual 4.0 Method Case Study: Villa Merah Picture Tutoring

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Abstract: This research aims to analyze the quality of the Villa Merah Picture Tutoring website on customer satisfaction using the Webqual 4.0 method. Using a quantitative approach, data was collected through a questionnaire distributed to users of the tutoring website. The Likert scale measures user perceptions of various aspects of website quality and customer satisfaction. Analysis was carried out to evaluate website quality based on the dimensions determined by the Webqual 4.0 method and to identify the relationship between website quality and customer satisfaction. It is hoped that the research results will provide better insight into the factors that influence customer trust in online tutoring services and provide guidance for business owners in improving website quality and strengthening relationships with customers.

Keywords: Customer Satisfaction, Image Tutoring, Likert Scale, Quantitative Analysis, Questionnaire, Website Quality, Webqual 4.0 Method.

1. Introduction

On the internet, a website acts like a set of linked webpages, all sharing the same address (domain name). Anyone, from a single person to a large organization, can create and manage these websites to share information with the public for various reasons [1]. Websites can be considered as platforms where customers and companies interact directly or indirectly, making them an essential tool for product promotions and establishing the authenticity of a company [2].

In the ever-growing digital era, websites have become one of the main elements in marketing strategies and customer service for various types of businesses, including tutoring. A website is not only the virtual face of a business, but also a starting point for potential customers to obtain information, make purchasing decisions, and interact with service providers.

Business competition is intensifying due to global digitalization, leading to transformations in international business strategies and the dynamics of global digital platforms in the market [3]. In the tutoring sector, competition is increasing with the emergence of various tutoring courses that offer a variety of programs and learning approaches. In this context, the quality of the tutoring website is not only a determining factor in attracting the interest of prospective students but also influences the level of customer trust in the tutoring.

Customer trust is crucial for fostering long-term relationships between businesses and customers [4]. A high level of trust can increase customer loyalty,

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increase customer retention, and help expand the customer base through positive recommendations.

The Webqual 4.0 method shows effectiveness in assessing the quality of a website to carry out the process of evaluating user satisfaction [5]. By considering technical aspects and user experience aspects, this method provides a comprehensive framework for evaluating website quality from various dimensions, such as reliability, responsiveness, usability, content and aesthetics.

Therefore, this research aims to analyze the quality of the Bimbel Gambar Villa Merah website with a focus on its influence on the level of customer satisfaction. By using the Webqual 4.0 method, this research will identify the factors that influence customers' perceptions of satisfaction with the tutoring website.

Through this case study, it is hoped that a relationship can be found between website quality and customer satisfaction, as well as factors that can increase customer satisfaction with both offline and online tutoring. It is hoped that the results of this research will provide valuable insights for tutoring business owners and marketing practitioners to improve the quality of their websites and strengthen relationships with customers.

The other part of the paper is arranged in to following sections. The Section 2 describes about the materials, Section 3 presents the results and the conclusions are presented in Section 4.

2. Materials and Methods

The method used in this research is to distribute a questionnaire consisting of several questions submitted in the form of an online form. This questionnaire is designed based on the Webqual 4.0 method framework

and related literature, so as to produce relevant and quality data for further analysis. The measurement scale used in this study is a five-point Likert scale. Users will be asked to rate websites for their respective qualities using a scale ranging from 1 (very unfavorable) to 5 (very favorable). The stage in designing this questionnaire is to determine questions regarding the respondent's biodata and questions taken from the indicators of the research variables. The questionnaire in this study was compiled by Webqual 4.0 indicators consisting of 23 questions and divided into 4 dimensions. Based on Website Quality (WebQual) 4.0 modeling, there are three dimensions of the independent variable and one dimension of the dependent variable. Three independent dimensions related to website quality using the Webqual 4.0 method, namely:

- Usability Quality(X1)
- Information Quality (X2)
- Interaction Quality (X3)

While user satisfaction (Y) as the dependent variable.

In collecting data, researchers first tested its validity and reliability. After that, the results of the data that have been obtained through the questionnaire are inputted into the MS Excel software, then the results of the data are processed into the SPSS software, then further analyzed to answer the problem formulation to test the hypothesis. The variables in the webqual 4.0 are shown in Table. 1.

Table. 1: Variables in webqual 4.0 Research

Variables	Description
X1	Usability Quality
X2	Information Quality
X3	Interaction Quality
Y	User Satisfaction

Table. 2: Questionnaire-based on Webqual 4.0 indicators

Dimensions	Webqual 4.0 Item	Question in Questionnaire	Item
Usability Quality	1. Users find it easy to learn website operations	1. Is the Villa Merah Picture Tutoring website easy to operate?	Q1
	2. User interaction with the website is clear and easy to understand.	2. Is it easy for users to interact with the website?	Q2
	3. Users find it easy to navigate the website.	3. Is easy to navigate or find menu/links on within the website?	Q3
	4. Users feel the website is easy to use to use.	4. Is the website easy to use?	Q4

Dimensions	Webqual 4.0 Item	Question in Questionnaire	Item	
Information Quality	5. Website has an attractive appearance	5. Is the website attractive?	Q5	
	6. Design according to the type of website.	6. Does the website design match the typical education website?	Q6	
	7. Website contains competencies.	7. Does the website have useful information?	Q7	
	8. Website create a positive experience for users?	8. Does the website provide Information or knowledge for users?	Q8	
	9. Provides sufficiently clear information.	9. Does the website provide clear information?	Q9	
	10. Provides reliable information.	10. Is the information on the website trustworthy?	Q10	
	11. Provides up to date information.	11. Is the information on the website up to date?	Q11	
	12. Provides relevant information.	12. Is the information on the website relevant?	Q12	
	13. Provides information that is easy to read and understand.	13. Is the information on the website easy to read and understand?	Q13	
	14. Provides enough detailed information.	14. Is the information on the website detailed?	Q14	
	15. Presents information	15. Does the red villa image tutoring website provide educational information, especially information on fsrd and architecture courses?	Q15	
	Interaction Quality	16. Has a good reputation.	16. Does the villa merah drawing tutoring website have a good reputation?	Q16
		17. Getting security to complete transactions.	17. Do users feel safe when doing activities on the villa merah image tutoring website?	Q17
		18. Feel safe in submitting personal data.	18. Do users feel safe in submitting personal data?	Q18
		19. Ease of attracting interest and attention.	19. Is the villa merah image tutoring website interesting to visit?	Q19
20. There is an atmosphere of community.		20. Is there a sense of community on the website (discussion/exchange of opinions)?	Q20	
User Satisfaction	21. Ease of providing feedback (feedback)	21. Is it easy to give feedback back to the website developer?	Q21	
	22. General opinion about this website	22. Are you satisfied with the facilities available on the villa merah picture tutoring website?	Q23	

2.1 Instrument Testing Technique

a. Validity Test

Validity test refers to the evaluation of how precisely a test measures what it is supposed to measure [6]. Data is said to be valid if the r -count > r -Table. 2 values with a significance level of 0.05 or 0.01 for a two-way test. If the coefficient value is smaller than the significance value of 0.05, then the data can be said to be valid.

b. Reliability Test

A measuring instrument is said to be reliable if the consistency in answers or test scores is identical after several test attempts [7]. Usually, before the data reliability test is carried out, the data validity test is carried out. This is because the data to be measured must be valid, and then proceed with the data

reliability test. However, if the data measured is invalid, then there is no need to do a data reliability test.

2.2 Classical Assumption Test

a. Normality Test

Normality tests determine if data adheres to a normal distribution pattern. In time series modeling, tests like Jarque-Bera, Anderson-Darling, Kolmogorov-Smirnov, and others verify the normality of the residuals [8].

b. Heteroscedasticity Test

This test checks if the ups and downs in the market (volatility) change frequently throughout the day, even when considering sudden price movements (jumps) and random fluctuations (noise) in high-frequency

data. It can identify both short-term and long-term changes in volatility [9].

c. *Multicollinearity Test*

MTest is a technique used to identify a problem called "multicollinearity" in regression analysis. This problem occurs when independent variables in your model are too highly correlated with each other. MTest uses a special approach (bootstrap method) to analyze the relationship between your variables and suggests which variables might be causing issues (variable removal guidance) based on a statistical test (Kolmogorov-Smirnov test) [10].

2.3 Data Collection Method, Population and Research Sample

a. *Data Collection Method*

The data collection method used in this research is the distribution of questionnaires consisting of several questions submitted in the form of an online form. In this study, the measurement scale used in this questionnaire is a Likert scale.

b. *Population and Research Sample*

Population refers to the entire group that is the subject of research [11]. In this study, the population will be active students at Villa Merah Picture Tutoring where they are active users of the website Villa Merah Picture Tutoring who have used the service or have experience interacting with the website.

Research Samples are subjects from the population that are used to represent the population in research [12]. In this study, the samples to be taken are some students of Villa Merah Picture Tutoring Bandung from the total population.

3. Results and Discussion

The following are the results of the tests that have been carried out:

3.1 *Validity and Reliability Test*

The following Table. 3 shows how well each question measures its intended concept (validity), using Corrected Item-Total Correlations.

a. *Validity Test*

The validity test used in this study is to use the Pearson product-moment correlation method which is calculated using SPSS 24.00 for Windows software. A question item is declared valid if the correlation coefficient value is more than or equal to the r table value of 5% with a sample size of 45, which is 0.301.

i. *User Satisfaction (Y)*

From the results of the validity test carried out on the variable (Y) User Satisfaction, of the 1 available questions declared valid with the following details: as shown in Table. 3.

Table 3: Results of user satisfaction variable validity testing (Y)

Question Item	Correlation Value (r)	Description
Y	1.000	Valid

ii. *Usability Quality (X1)*

From the results of the validity test conducted on the Usability Quality variable, of the 8 questions available, all are valid with the following details as presented in Table. 4.

Table. 4: Usability Quality Variable Validity Testing Results (X1)

Question Item	Correlation Value (r)	Description
Q1	0.769	Valid
Q2	0.739	Valid
Q3	0.760	Valid
Q4	0.660	Valid
Q5	0.514	Valid
Q6	0.597	Valid
Q7	0.478	Valid
Q8	0.388	Valid

iii. *Information Quality (X2)*

From the results of the validity test carried out on the Information Quality variable, of the 7 questions available, all are valid with the following details presented in Table. 5.

Table. 5: Results of Validity Testing of Information Usability Variables (X2)

Question Item	Correlation Value (r)	Description
Q1	0.552	Valid
Q2	0.492	Valid
Q3	0.599	Valid
Q4	0.741	Valid
Q5	0.747	Valid
Q6	0.636	Valid
Q7	0.586	Valid

iv. Interaction Quality (X3)

From the results of the validity test conducted on the Interaction Quality variable, of the 6 questions available, all are valid with the following details as shown in Table. 6.

Table. 6: Interaction Quality Variable Validity Test Results (X3)

Question Item	Correlation Value (r)	Description
Q1	0.668	Valid
Q2	0.675	Valid
Q3	0.427	Valid
Q4	0.739	Valid
Q5	0.787	Valid
Q6	0.600	Valid

b. Reliability Test

The reliability test used in this study uses the Cronbach's Alpha method as presented in Table. 7. The higher the Cronbach's alpha coefficient value indicates that the variable is more reliable. A variable is declared reliable if the calculated r coefficient value is greater than or equal to the r table value of 5% with the degree of freedom being the number of question items. The following are the results of the reliability test for each variable used:

Table. 7: Reliability Testing Results

Variable	Number of Items	Alpha Coefficient	R Table	Description
User Satisfaction	1	1.000	0.301	Reliable
Usability Quality	8	0.775	0.301	Reliable
Information Quality	7	0.735	0.301	Reliable
Interaction Quality	6	0.732	0.301	Reliable

The results of the reliability analysis using the Cronbach Alpha method show that this measuring instrument is quite reliable. The Cronbach Alpha value for usability (X1) is 0.775, information quality (X2) is 0.735, interaction quality (X3) is 0.732, and customer satisfaction (Y) is 1.000. All Cronbach Alpha values are greater than 0.6, which indicates that this measuring instrument can be used to measure the variables in question.

3.2 Statistical Interpretation of Classical Assumptions on Regression Models

a. Normality Test Results

To find out if the data is normally distributed, a normality test with the Normal Probability Plot (NPP) in SPSS was conducted.

i. Graphical Regression P-Plot

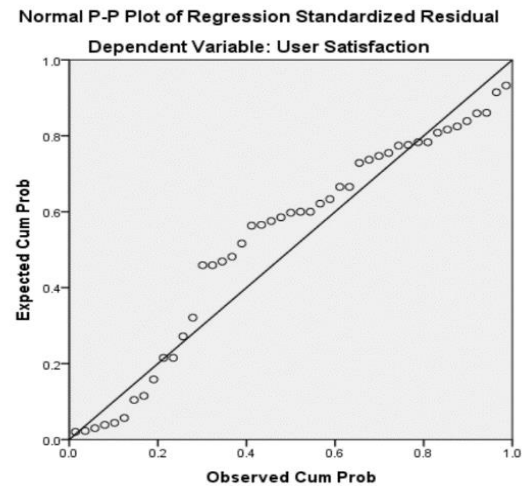


Fig. 1: P-P Plot Graph of Residual Normality

Visualization of residual data on the Normal Probability Plot (NPP) shows a pattern of distribution of points concentrated around the diagonal line as shown in Fig. 1. This indicates that the residuals are normally distributed, so the regression model fulfills the assumption of normality.

ii. Statistical Test

The Kolmogorov-Smirnov (KS) test was conducted to verify and strengthen the findings of the p-plot normality test regarding residual normality. The following Table. 8, shows the results of the KS test.

Table. 8: Kolmogorov Smirnov test results

Kolmogorov Smirnov Value	Significant Value	Alpha Value	Description
0,617	0,137	0,05	Normal

Statistical analysis with the Kolmogorov-Smirnov test resulted in a Z value = 0.617 and a p-value = 0.137. Interpretation of these values indicates that there is no significant difference between the observed residual distribution and the normal distribution. In other words, the residuals are normally distributed.

b. Heteroscedasticity Test Results

The results of the calculation using SPSS, the results of the heteroscedasticity test using the Glejser test are as follows in Table. 9.

Table. 9: Glejser test results

Model	Unstandardized Coefficients		Standardized Coefficients		t	Sig.
	B	Std. Error	Beta			
1	(Constant)	.717	.439		1.632	.110
	Usability Quality	-.043	.017	-.599	2.540	.015
	Information Quality	.017	.020	.181	.820	.417
	Interaction Quality	.023	.019	.261	1.245	.220

Based on the results of the heteroscedasticity test using the Glejser test method, it can be seen that the variable 'Usability Quality' has a significance value of 0.015, which means that this variable is statistically significant at the 5% confidence level and has the potential to cause heteroscedasticity in the model. Meanwhile, the variables 'Information Quality' and 'Interaction Quality' with significance values of 0.417 and 0.220 respectively show no statistical significance, which means they are not significant in causing heteroscedasticity. Thus, only 'Usability Quality' needs to be considered in the context of heteroscedasticity in this regression model.

c. Interpretation of Multicollinearity Statistics in Regression Models

Using SPSS software, the Tolerance and VIF values were calculated to test for the presence of multicollinearity in the regression model, the test details are kept in Table. 10.

Table. 10: Multi collinearity test results

Model	Collinearity Statistics		
	Tolerance	VIF	
(Constant)			
1	Usability Quality	.376	2.661
	Information Quality	.428	2.336
	Interaction Quality	.476	2.101

Multicollinearity analysis shows no indication of multicollinearity between independent variables (Usability, Information Quality, Interaction Quality) in the regression model.

3.3 Hypothesis Testing Results

This research evaluates the website www.bimbelgambar.id using WebQual 4.0 and SPSS. The results show an explanation of the influence of each WebQual 4.0 variable on the level of customer satisfaction.

a. Usability (consumer usability) (X1) on customer satisfaction (Y) on the website www.bimbelgambar.id

Statistical analysis with a t value of 4.441 and a significant value of 0.000 ($P < 0.05$) shows that there is a significant relationship between the usability of the www.bimbelgambar.id website and customer satisfaction.

b. Information Quality (Information Quality) (X2) on customer satisfaction (Y) on the website www.bimbelgambar.id

The t test results with a t value of 2.136 and a significance of 0.039 ($P < 0.05$) strengthen the H2 hypothesis, namely that there is a significant effect of the quality of website information www.bimbelgambar.id on customer satisfaction.

c. Interaction Quality (X3) on customer satisfaction (Y) on the website www.bimbelgambar.id

The t test results with a t value of -987 and a significance of 0.329 ($P > 0.05$) indicate that hypothesis H3, there is no significant effect of the quality of website interactions www.bimbelgambar.id on customer satisfaction, cannot be accepted.

4. Conclusion

This research aimed to analyze the impact of website quality on customer satisfaction using the Webqual 4.0 method, with a focus on the Villa Merah Picture Tutoring website. The study employed a quantitative approach, gathering data through a questionnaire distributed to users of the tutoring service's website. The questionnaire was meticulously designed to measure perceptions of various website quality aspects on a Likert scale, encapsulating dimensions defined by the Webqual 4.0 method.

The findings of this research indicated significant correlations between all measured dimensions of website quality and customer satisfaction. Usability quality was highlighted as crucial, encompassing ease of learning and navigating the website, which facilitates a user-friendly experience. This dimension directly influences customer satisfaction by ensuring that users can find and utilize necessary information with minimal effort, contributing to a positive user experience.

Information quality also played a vital role in customer satisfaction. The research underscored the importance of providing clear, reliable, and up-to-date information. Users rated the website highly when it offered content that was not only easy to comprehend but also relevant and detailed, thereby enhancing the overall utility of the website for its visitors.

Interaction quality was another significant factor. The study found that secure interactions, where users felt safe to conduct transactions and provide personal data, fostered a greater sense of trust and satisfaction. The ease of providing feedback to the website developers and a sense of community among users were also pivotal in enhancing customer satisfaction.

In conclusion, the research confirmed that all three dimensions of website quality—usability, information, and interaction—are integral to fostering customer satisfaction. These elements are critical in the context of online educational services, where effective communication and efficient service delivery are essential. Therefore, online tutoring business owners and marketing practitioners are advised to continually optimize these aspects of their websites to maintain and enhance customer satisfaction. The insights from this

study provide a valuable framework for improving website quality, which in turn can lead to increased customer loyalty and a broader customer base.

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Conflict of Interest

The authors declare no conflict of interest in the publication process of the research article.

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