

## WebQual 4.0 Analysis of Indonesian Election and Government Websites

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### ABSTRACT

*The KPU is the body that organizes general elections in Indonesia. Its responsibilities include deciding which parties can contest elections, organizing voting and announcing the results and seats won in the various branches of government. Currently, many KPU website users in this case register as regional heads by visiting the KPU.go.id website. Problems that occur when visiting the KPU.go.id website include that when uploading files there is often a problem with the system response taking a long time to load, when logging in to move to a new tab the process takes too long. The quality of website services in terms of user perception and intensity of use of KPU website services is less than optimal. Based on the F Test results table, it is known that the significant value in the F test is 0.000, which is smaller than the determined significant value of 0.05, and the calculated F value of 61.883 is greater than 3.09. So it can be concluded that the variables usability (X1), information quality (X2) and interaction quality (X3) together (simultaneously) influence user satisfaction (Y).*

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## INTRODUCTION

Good service quality is not only based on the perspective or perception of the service provider, but also on the perspective or perception of the public. The public who benefits from the service is the one who determines the quality of the service. Public perception of service quality is a comprehensive assessment of the excellence of a service. Good service quality is determined based on the developer's perception and also on the perception of the end user. At the same time, the end user indirectly determines the quality. User perception can be used to provide a comprehensive assessment of the excellence of a service, namely a website. (Natiara & Hermaliani, 2023). The General Elections Commission (KPU) is the body that organizes general elections in Indonesia. Its responsibilities include deciding which parties can participate in the elections, organizing the voting, and announcing the results and seats won in various branches of government. Currently, many users of the KPU website, particularly those registering as regional heads, visit the website KPU.go.id.

Problems encountered when visiting the KPU.go.id website include frequent file upload issues, slow system response times, and lengthy login times when switching to a new tab. Given the current problems on the KPU website, a method is needed to analyze website quality, both in terms of service and information quality. Website quality can be measured using Webqual 4.0, which is useful for assessing the overall website based on user perception (Ariestya et al., 2024). Information and communication technology continues to develop over time, including the emergence of the internet and websites. Besides their easy access and accessibility to anyone,



the internet and websites are also the most up-to-date sources of information. The internet has become a lifestyle for many people worldwide, including Indonesia. The continued increase in internet users indicates a growing number of online activities, particularly in the field of government services. Website quality has become a strategic issue in communication and interaction with users.

Webqual is an instrument for assessing the usability, information, and quality of service interactions on a website. Webqual is one method or technique for measuring website quality based on user perceptions (Ardiyansyah & Iramayani, 2021). The importance of analyzing the quality of a website in relation to the services it provides to users, in this case the public, is the objective of this research. Good service quality is not solely based on the perspective or perception of the service provider; user satisfaction is also a benchmark for the success of implementing an e-government website within a government (Irmayanti et al., 2021). Based on the above analysis, the researcher is motivated to conduct research and write a thesis. Therefore, the researcher would like to provide a title for this research.

## RESEARCH METHOD

The WebQual method uses a research instrument developed using the Quality Function Development (QFD) method. Since the WebQual method was first developed in 1998, the method has undergone several developments in its dimensions. WebQual is a measurement tool for assessing the quality of a website based on research instruments that can be categorized into three variables: usability, information quality, and service interaction (Suharto et al., 2021).

Website Quality (WebQual) is one method for measuring website quality based on end-user perceptions. WebQual is a development of ServQual, which has been widely used to measure service quality (Rahmatullah et al., 2019). Based on research measuring the quality of websites managed by the OECD (Organization for Economic Cooperation and Development) using the WebQual 4.0 method, three areas or dimensions were identified: usability, information quality, and interaction quality. (Zukanah et al., 2024)

This study applies the Webqual 4.0 method as the primary approach. This research method is used to evaluate user satisfaction levels. This method will be applied in the research instrument development and data analysis process.

### A. Research Stages

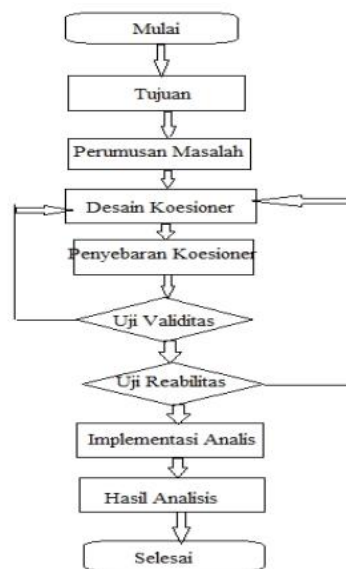


Figure 1 Research Stages

This research stage begins with the research objective and then formulates the problem regarding user satisfaction with the General Elections Commission (KPU) website. After formulating the problem, the next step is to design a questionnaire following WebQual 4.0 guidelines. The questionnaire is distributed to website users and then tested for validity and reliability. If the research questionnaire is found to be invalid and unreliable, it is redesigned. If the questionnaire is found to be valid and reliable, it can be entered into the testing method, ultimately yielding research results.

B. Webqual 4.0 Method

Webqual 4.0 was developed from Webqual versions 1 through 3 and adapted and developed from Servqual. Webqual 4.0 consists of three dimensions: usability, information quality, and interaction service. Webqual 4.0 is a tool for measuring website quality based on research instruments that can be categorized into four variables: usability, information quality, interaction quality, and overall impression (Quiroz & Sutabri, 2023).

1. Usability

Includes "website design" and "usability," such as the appearance of the website, ease of use, page layout, and images displayed to users.(Ishaq et al., 2021)

2. Information Quality

Refers to the quality of website content and its relevance to user needs, for example, the amount, accuracy, context, format, and relevance of information. (Rahmi, 2021)

3. Service Interaction Quality

The quality of the interaction services offered by the website to users. This section is divided into "trust" and "empathy." For example, issues regarding transactions, information security, product delivery, personalization, and communication with the website owner.(Imam Budiawan et al., 2025)

C. Data Collection

Data collection in this study was conducted as follows:

1. Primary data used in this study included interviews with the KPU's information technology division related to the research, distributing questionnaires, and reading research journals.
2. Secondary data used in this study included data obtained through reference books, journals, and other information related to the research problem.
3. Questionnaire In this study, the measurement scale used in this questionnaire was a Likert scale, with multiple-choice answer criteria and weighted scores for the answers as follows:

Table 1. Likert Scale

Code	Description	Score
SS	Strongly Agree	5
S	Agree	4
N	Neutral	3
TS	Disagree	2
STS	Strongly Disagree	1

Source: (Rahayu & Shafina, 2022)

D. Research Population and Sample

The population in this study is KPU website users. The website user population data used by the researcher was taken from August 2 to September 29, 2025. Due to the large number of users, a sample was determined. According to (Sugiyono, 2020), "A sample is a collection of sampling units, usually drawn from a frame." The sample I will use is the Slovin method. The Slovin formula is:

Formula:

$$n = \frac{N}{1 + Ne^2}$$

Where:

n = Number of Samples

N = Population Size

e = Error Tolerance

The first step in using this formula is to determine the tolerance limit and the error limit, expressed as a percentage. The smaller the error tolerance, the more accurate the sample. The smaller the error tolerance, the larger the sample size required. In this study, the tolerance limit used was 5%, resulting in a 95% accuracy rate. The total population from January 1 to February 28, 2025, was 133 visitors, so the formula was determined using the Slovin formula as follows:

Description:

n = Minimum number of respondents

N = Population Size

d = Error Tolerance Limit

$$n = \frac{N}{1 + Ne^2}$$

$$1+N(d)^2$$

$$n = \frac{133}{1+135(0.5)^2}$$

$$n = \frac{133}{1+133(0,0025)} \quad n = \frac{133}{1+0,3325} = \frac{133}{1,3325} = 99,81$$

Rounded to 100 respondents.

1. Hypothesis

H0: There is a significant relationship or influence between user satisfaction on the KPU website and the dimensions of Usability, Information Quality, and Service Interaction Quality.

H1: There is no significant relationship or influence between user satisfaction on the KPU website and the dimensions of Usability, Information Quality, and Service Interaction Quality.

2. Data Analysis Tools

SPSS, short for Statistical Product and Service Solution, is a statistical data processing program that is widely used by researchers. various scientific fields. SPSS is one of the many statistical software programs widely recognized among its users. (Sanny et al., 2023) In addition, there are many other statistical software programs such as Minitab, Systas, Microstat, and many more. (Handayani et al., 2023).

**RESULTS AND DISCUSSION**

A. Respondent Characteristics

Respondent Characteristics Based on Age It can be seen that out of 100 respondents, they are aged 22-40 years, with a total of 100 respondents, representing 100%.

Table 2. Respondent Gender Respondent Characteristics by Age

Gender	Age	Frequency
Laki-laki dan perempuan	22-40 Tahun	100 pengguna

Source: (Research, 2025)

Table 3. Respondents' Age Respondent Characteristics by Gender

Valid	Characteristics Based on Gender	
		Frequency
	Laki – Laki	65
	Perempuan	35
Total	100	

Source: (Research, 2025)

B. Research Instrument Testing

1. Validity Test

This study involved 100 respondents. Of these respondents, the following are the results of the validity test analysis of the measuring instrument for each question variable, as seen in the Corrected Item Total Correlation values:

Table 4. Variable Validity Test Results Usability (X1)

Variables Questions	r count	r table	Information
X1.1	0.819	0,196	Valid
X1.2	0.819	0,196	Valid
X1.3	0.514	0,196	Valid
X1.4	0.701	0,196	Valid
X1.5	0.494	0,196	Valid
X1.6	0.692	0,196	Valid
X1.7	0.568	0,196	Valid
X1.8	0.592	0,196	Valid

Source: (Research, 2025)

Table 5. Results of the Validity Test for the Information Quality Variable (X2)

Variables Questions	r count	r table	Information
X2.1	0.673	0,196	Valid
X2.2	0.624	0,196	Valid
X2.3	0.728	0,196	Valid
X2.4	0.666	0,196	Valid
X2.5	0.598	0,196	Valid
X2.6	0.768	0,196	Valid
X2.7	0.759	0,196	Valid

Source: (Research, 2025)

Table 6. Results of the Validity Test for the Interaction Quality Variable (X3)

Variables Questions	r count	r table	Information
X3.1	0.534	0,196	Valid
X3.2	0.613	0,196	Valid
X3.3	0.662	0,196	Valid
X3.4	0.859	0,196	Valid
X3.5	0.571	0,196	Valid
X3.6	0.760	0,196	Valid
X3.7	0.674	0,196	Valid

Source: (Research, 2025)

Based on the table above, it can be concluded that each question variable has a calculated r value (the value in the Corrected Item Total Correlation) greater than the table r value (obtained from the product-moment r table values). A positive value means the question item or indicator is declared valid. The table r value uses a significance level of 0.05 and N (number of respondents) = 100 respondents. By finding the table r value using the r table for degrees of freedom (df) using the Pearson correlation formula  $df = n - 2$ , so  $df = 100 - 2 = 98$ , the table r value for  $df = 98$  is 0.196. Therefore, the product-moment r value is 0.196. The results of the calculations and the table above indicate that each question item can be declared valid because the calculated r value is greater than the table r value.

## 2. Reliability Test

To measure the reliability of a research instrument, a test is performed. The analysis was based on Cronbach's Alpha. The following are the reliability test results:

Table 7. Reliability Test Results

Instrument Name	Variable	Cronbach's Alpha Value	Criterion Value	Information
Usability	X1	0,878	0,6	Reliable
Information Quality	X2	0,887	0,6	Reliable
Interaction Quality	X3	0,881	0,6	Reliable
Kepuasan Konsumen	Y	1.000	0,6	Reliable

Source: (Research, 2025)

Based on the results of the reliability analysis using the Cronbach Alpha technique, the Cronbach Alpha value for usability (X1) was 0.878, information quality (X2) was 0.887, interaction quality (X3) was 0.881, and customer satisfaction (Y) was 1.000. The conclusion is that the reliability test results are considered reliable, because they are greater than 0.6.

## 3. Normality Test Results

The calculation results using SPSS, this data was analyzed using a normal probability plot, which is used to determine whether the data is normally distributed or not. The following results were obtained:

### a. Graphical Analysis with P-Plot Regression

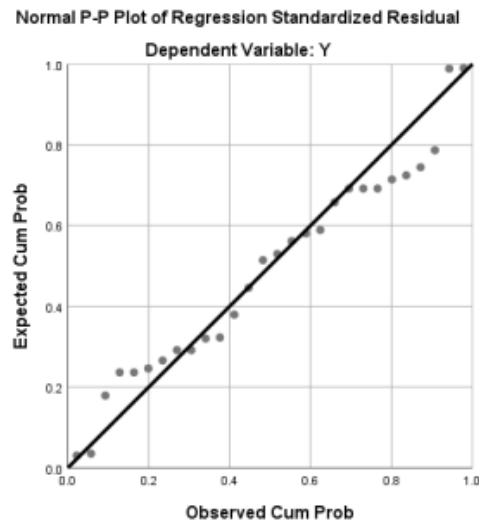


Figure 2. P-P Plot of Normality Residuals

From the normal probability plots, we can see that the points are spread out and overlap around the diagonal, indicating that the residuals are normally distributed. The regression model is said to meet the assumption of normality, as seen when the points follow and approach the diagonal line.

b. Statistical Test

Statistical testing of residual normality was performed using the Kolmogorov-Smirnov test to support or prove the results of the p-plot normality test. The results of the Kolmogorov-Smirnov (KS) test are as follows:

Table 8. Results of the Kolmogorov Smirnov Test

Kolmogorov Smirnov Value	Significant Value	Alpha Value	Information
0,136	0,200	0,05	Normal

Source: (Research, 2025)

Based on the table above, the normality test using the Kolmogorov-Smirnov test shows that the Kolmogorov-Smirnov value is 0.136 with a significance level of 0.200, which is greater than 0.05. Therefore, it can be concluded that the residuals are normally distributed.

4. Multiple Linear Regression Test Results

a. Partial Significance Test (t-Statistic Test)

Model		Coefficients <sup>a</sup>				
		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.354	.246		-1.443	.152
	Usability	.038	.013	.289	3.021	.003
	Information Quality	.052	.015	.302	3.562	.001
	Interaction Quality	.058	.016	.325	3.628	.000

Figure 3. t-Test Results

Based on the table above, it can be seen that the three independent variables—usability (X1), information quality (X2), and interaction quality (X3)—are significant at  $\alpha = 5\%$  in the t-table distribution. The formula for determining the t-table is as follows:

$$\begin{aligned} Df &= (\alpha / 2) \\ &= (0,05 / 2) = 0,025 \\ df &= n - k - 1 \\ &= 100 - 3 - 1 = 96 \\ t &= 0,025: 96 = 1.9849 \end{aligned}$$

b. Coefficient of Determination

Table 9. Results of the Determination Coefficient

Model	R	R Square	Std. Error of the Estimate
1	.812 <sup>a</sup>	.659	.648

Source: (Research, 2025)

Table 10 above shows a model summary, showing the coefficient of determination (R Square) of 0.659, where 0.812 is the square of the correlation coefficient, or R, of 0.812. A coefficient of determination of 0.659 equals 65.9%. This figure indicates that usability (X1), information quality (X2), and interaction quality (X3) influence customer satisfaction (Y). The remaining  $100\% - 65.9\% = 24.1\%$  is influenced by variables outside of the WebQual 4.0 variable.

c. Simultaneous Significance Test (F Statistic Test)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	18.792	3	6.264	61.883	.000b
	Residual	9.718	96	.101		
	Total	28.510	99			

a. Predictors: (Constant), Interaction Quality, Information Quality, Usability

b. Dependent Variable: KepuasanKonsumen

Figure 4. F Test Results

The following table f can be determined using the formula:

$$\begin{aligned} df1 &= (k - 1) \quad df2 = (n - k - 1) \\ df1 &= (3 - 1) = 2 \quad df2 = (100 - 3 - 1) \\ &= (97 - 1) \\ df &= 2;96 \quad f = 3,09 \end{aligned}$$

Based on the table above, the F-test significance value of 0.000 is smaller than the specified significance value of 0.05, and the calculated F-value of 61.883 is greater than 3.09.

Therefore, it can be concluded that the variables usability (X1), information quality (X2), and interaction quality (X3) simultaneously influence consumer satisfaction (Y).

**CONCLUSION**

Overall, users of the KPU website were satisfied with the ease of use, information, and interaction provided. This is evidenced by the F-test results, which showed a significant value of 0.855 and a calculated F of 2.58. This indicates that the variables usability, information quality, and interaction quality simultaneously influence user satisfaction. The positive relationship between website services and these three independent variables significantly impacts consumer satisfaction. The analysis shows that the KPU website quality dimensions, based on WebQual 4.0, significantly influence consumer satisfaction, with a coefficient of determination of 0.659, meaning that 65.9% of consumer satisfaction is influenced by these three variables, while 24.1% is influenced by variables other than WebQual 4.0.

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