

UNIVERSITY SERVICE WEBSITE QUALITY MEASUREMENT WITH WEBQUAL 4,0 (CASE STUDY: FACULTY OF BUSINESS AND ECONOMICS ISLAMIC UNIVERSITY OF INDONESIA)

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Abstrak

Implementasi website sebagai media layanan menjadi sangat populer digunakan dalam perkembangan di Perguruan Tinggi khususnya di masa pandemi COVID-19 yang menerapkan protokol kesehatan. Dengan adanya sistem informasi layanan berbasis website memungkinkan untuk tetap menjalankan proses bisnis dalam pelayanan terhadap penggunanya tanpa harus datang dan menghindari interaksi langsung atau tatap muka. FBE UII mengimplementasikan Sistem Informasi Website Layanan untuk melayani mahasiswa secara daring yang menggantikan sistem manual yang dilayani secara langsung dan tatap muka. Pertama diimplementasikan sampai dengan sekarang belum pernah dilakukan pengukuran terhadap kualitas layanan yang berasal dari penggunanya. Pengukuran menggunakan metode WebQual 4,0 yang mengukur penilaian pengguna terhadap 3 area yaitu kegunaan (usability), kualitas informasi (information quality), kualitas interaksi layanan (service interaction quality) yang berpengaruh terhadap kepuasan pengguna (user satisfaction) dengan parameter pengguna mau menggunakan website layanan. Penelitian ini dilakukan di FBE UII. Pengumpulan data penelitian menggunakan kuesioner. Populasi adalah mahasiswa FBE UII yang pernah menggunakan website layanan. Hasil penelitian ini berupa kesimpulan penerapan website sukses untuk menggantikan sistem yang sebelumnya digunakan, kualitas layanan berbasis website pada sistem informasi baik, persepsi penilaian pengguna mudah dalam berinteraksi, dan rekomendasi langkah strategis yaitu melakukan migrasi layanan lain dengan memanfaatkan website layanan terpadu.

Kata kunci: kualitas website; perguruan tinggi; website layanan; webqual 4.0

Abstract

The implementation of the website as a service medium has become very popular in the developments of universities, especially during the COVID-19 pandemic, which implements health protocols. With the existence of a website-based service information system, it is possible to continue running business processes in service to users without having to come and avoid direct or face-to-face interactions. FBE UII implements a Website Service Information System to serve students online, which replaces the manual system that is served directly and face-to-face. Firstly, it is implemented until now, there has never been a measurement of the quality of service that comes from its users. The measurement used the WebQual 4.0 method which measures the user's assessment of 3 areas, namely usability, information quality, service interaction quality which affects user satisfaction with the parameter of the users using the service website. This research was conducted at the FBE UII. Research data collection used a questionnaire. The population was FBE UII students who had used the service website. The results of this study were the conclusions of successful website implementation to replace the previously used system, the quality of website-based services on information systems was good, the perception of user ratings was easy to interact with, and recommendations for strategic steps, namely migrating other services by utilizing integrated service websites.

Keywords: website quality; university, service website; webequal 4.0

INTRODUCTION

The development of online service information systems using advances in website-based information technology is the demand of

every institution or organization is facing the current digital era. Most institutions and organizations are already providing services by utilizing information systems. Stakeholders have a great influence on the success rate of implementing



information systems in an institution or organization. Stakeholders or person who has interest play an important role in the design, development, and implementation of information technology, both directly and indirectly in decision making (Hermanto, Rahmat, & Riyanto, 2018). This becomes important because the development of information technology is very dependent on stakeholder policies.

In addition, it needs have a measurement that is used to evaluate the success of the implementation of an information system implemented in an institution or organization, especially regarding the positive impact that can be felt by service users (Sapty Rahayu, Aprilianto, & Sigit Purnomo Wuryo Putro, 2018).

One of the solutions in the development of the digital era that demands easy access is a service information system using a website in the application of a user service information system. Many websites are found that do not provide satisfaction from their users because they are not by the original purpose of the website being created (Santiari & Rahayuda, 2018). It means that the application is not for the original purpose of the website.

In other research, it explained that the initial role of the website is as an information medium for an institution or organization. Along with technological developments, the website has turned into a service media that has proven to be able to provide facilities for users to get services quickly and easily (Tristiyanto, Saputri, & Iqbal, 2020). It is in line with the need for special measurements of website parameters.

The important stage in website development is the stage of measuring the quality of the website by using the appropriate parameters to obtain recommendations for implementation (Hidayat & Suryani, 2020). To carry out the evaluation, researchers used the standards of the Webqual 4.0 method framework, which measures the criteria for usability, information quality, and quality of service interactions that have an influence on user satisfaction to be used in evaluating the implementation and recommendations of system development.

In other research, it is stated that Webqual 4.0 can be used to measure and analyze the quality of the website through stages such as questionnaire data collection, data processing, data testing, validation process, and analysis (Rerung, Fauzan, & Hermawan, 2020). In the end, it will show an assessment of the quality of a service website that comes from stakeholders and users. It explains that Webqual is one of the methods that can be used in

evaluating service websites that come from user assessments (Tristiyanto et al., 2020). The business process carried out by universities with the use of information systems is something that cannot be avoided (Sutanto, 2021). Thus, the application of information systems becomes an important part of running the business processes of university organizations (Sutanto, Setiawan, Rakhman, Utami, & Mustafa, 2020).

The Faculty of Business and Economics, Islamic University of Indonesia uses Information System for Student Letters to provide active student letters at the undergraduate level for both regular and international students. In its development, this information system is developed to be used by students of Diploma, Masters, and Doctoral programs. This system was built in August 2019 and began to be effectively used in a transitional period on January 1, 2020. Within three months, the program was officially in full use and replaced the manual system. In this case, there are considerations in evaluating the quality and success of the service website as well as capturing the perceptions of the assessment from the aspect of service utilization that comes from its users.

This research measures the success of the application or implementation of the use of the Information System for Student Letters at FBE UII and at the same time recommendations for system development using the WebQual 4.0 measurement method approach. This method is used to evaluate the website-based service information system which sees at the 3 assessment areas of the user. From the model used, it is hoped that conclusions can be drawn in the form of measurement analysis of the implementation of web-based service information systems as well as recommendations for future information systems.

RESEARCH METHODS

The Webqual 4.0 method is a method based on the assessment of user satisfaction in the process of measuring the quality of website services. The analysis of the results of Webqual 4.0 leads to 3 (three) areas, namely the usability area, the information quality area, and the service interaction quality area (Barnes & Vidgen, 2002).

In assessing website user satisfaction, the quality of the website can be described by the usability aspect which is manifested in Webqual 4.0 because this aspect emphasizes the assessment from the user's point of view and perceptions related to two other related aspects namely the quality of information and the quality of service interactions (Kurniawati, Kusyanti, & Mursityo,

2018). Furthermore, Webqual 4.0 is described in Figure 1.

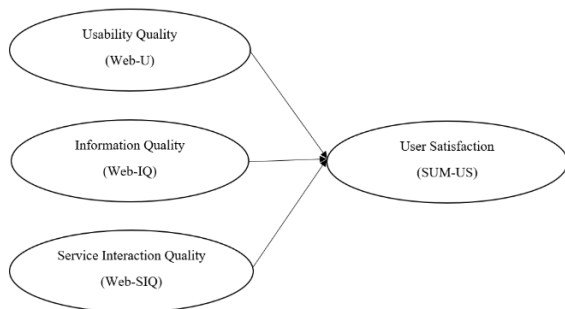


Figure 1. The Relationship of Webqual 4.0 Area Measurement Model

This type of research is a quantitative study that includes assessment data in the form of numbers. To obtain this data, the researchers used surveys or data collection or information from a predetermined population (Priyono, 2016). A descriptive approach is also used to describe the real conditions that exist in the research object during the implementation of the system.

Sampling and Population Method

A method used in sampling data is usually called a sampling technique. In this research, researchers used the purposive sampling technique or subjective sampling. Purposive sampling is a method of sampling that uses criteria and assessments from the researchers themselves in the process of selecting members of the population to be used in the research. Purposive sampling is included in the non-probability criteria (Sugiyono, 2015). In this case, the researcher determines the criteria for respondents, namely FBE UII students who have used the website service information system for student letters. The Slovin method is used to determine the size or number of samples to be used in the research. Slovin formula (Sujarweni, 2014) can be seen in below:

$$n = \frac{N}{1+(Nxe^2)} \dots\dots\dots (1)$$

Description:

- n : Sample size
- N : Population
- E : Detachment looseness percentage because of error in taking sample wanted

Validity Test

The validity test is used to test the accuracy of the test equipment or size in evaluating data. Data is said to be accurate and has high validity in

measurement if it can fulfill and describe the measured variables as expected (Ashari, Pradana, & Wahyuni, 2020). In this test, researchers used the IBM SPSS software.

Reliability Test

A reliability test is a test that aims to measure the consistency of the questionnaire data (Kurniawati et al., 2018). In this test, researchers used the IBM SPSS software.

Data Analysis

In this research, researchers used user satisfaction assessment aspects which included three assessment aspects or independent variables, namely usability, information quality, and service interaction quality, and one dependent variable, namely user satisfaction (Roliani, Tristiyanto, & Heningtyas, 2018).

The hypothesis used to measure the quality of website services is determined as follows:

- H1: There is a relationship between usability and user satisfaction.
- H2: There is a relationship between information quality and user satisfaction.
- H3: There is a relationship between service interaction quality and user satisfaction.

Research Flow

In this research, several stages will be done based on the research flow as seen in Figure 2 as follows:

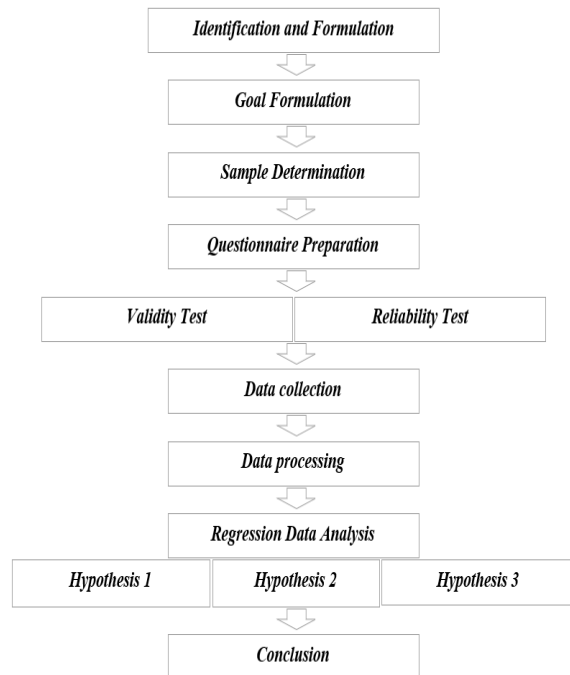


Figure 2. Research Flow



RESULTS AND DISCUSSION

In collecting questionnaire data, researchers compiled several questions using the WebQual 4.0 standard. As a result, the list of questions can be seen in Table 1 below.

Table 1. WebQual 4,0 Questionnaire

No.	Question	Score
A. Usability (X₁)		
1	The fbeuii.id/siso-fe website is easy to operate	1-5
2	Interaction with the fbeuii.id/siso-fe website is clear and understandable	1-5
3	The fbeuii.id/siso-fe website has easy navigation (easy to find menus on the website)	1-5
4	The fbeuii.id/siso-fe website address is easily accessible	1-5
5	The fbeuii.id/siso-fe website has an attractive appearance	1-5
6	The information layout on the fbeuii.id/siso-fe website is appropriate	1-5
7	The fbeuii.id/siso-fe website has complete facilities or features	1-5
8	The fbeuii.id/siso-fe website provides a positive experience for users	1-5
B. Information Quality (X₂)		
1	The fbeuii.id/siso-fe website provides clear enough information	1-5
2	The fbeuii.id/siso-fe website provides reliable information	1-5
3	Presentation of information on the fbeuii.id/siso-fe website is always up to date	1-5
4	The fbeuii.id/siso-fe website provides relevant information	1-5
5	The fbeuii.id/siso-fe website provides accurate data information	1-5
6	The fbeuii.id/siso-fe website provides detailed information	1-5

No.	Question	Score
7	Information on the fbeuii.id/siso-fe website is presented in the appropriate format	1-5
C. Interaction Quality (X₃)		
1	The fbeuii.id/siso-fe website has a good reputation	1-5
2	The fbeuii.id/siso-fe website is safe from viruses and the like	1-5
3	Any data inputed on the fbeuii.id/siso-fe website is kept confidential	1-5
4	The fbeuii.id/siso-fe website provides space for personalization	1-5
5	The fbeuii.id/siso-fe website provide convenience to communicate with the faculty	1-5
6	The fbeuii.id/siso-fe website guarantees a high level of trust in the information presented	1-5
D. Entirety (Y)		
1	Has the Information System of Student Letter Website or fbeuii.id/siso-fe successfully replaced the Manual Student Letter Service that was previously used?	Yes, No, Possible
2	The Information System of Student Letter website or fbeuii.id/siso-fe is overall good	1-5

The questionnaire was distributed via email to the respondents and conducted online using Google form media to make it easier to reach.

Sampling dan Population Method

The population of respondents is students of the Faculty of Business and Economics UII from the undergraduate level with the criteria of having used a service website during the month of January 2021. Thus, the calculation is carried out as follows:

$$N = 100$$

$$e = 0.10$$

$$n = \frac{100}{1 + (100 \times 0.10^2)}$$



From this formula, the size or number of samples that will fill out the questionnaire is 50 respondents.

The hypothesis used to measure the quality of website services is determined as follows:

H1: There is a relationship between usability and user satisfaction.

H2: There is a relationship between information quality and user satisfaction.

H3: There is a relationship between service interaction quality and user satisfaction.

Validity Test

In conducting the validity test, researchers used 30 respondents with 21 questions in the questionnaire. The significance level for the test was 0.2960 which was carried out with the IBM SPSS Statistics software. The result can be seen in Table 2 as follows:

Table 2. Validity Test

Question	r_{xy}	r_{tabel}	Conclusion
PA1	.371*	0.2960	Valid
PA2	.792**	0.2960	Valid
PA3	.710**	0.2960	Valid
PA4	.484**	0.2960	Valid
PA5	.739**	0.2960	Valid
PA6	.771**	0.2960	Valid
PA7	.729**	0.2960	Valid
PA8	.506**	0.2960	Valid
PB1	.746**	0.2960	Valid
PB2	.619**	0.2960	Valid
PB3	.672**	0.2960	Valid
PB4	.711**	0.2960	Valid
PB5	.793**	0.2960	Valid
PB6	.812**	0.2960	Valid
PB7	.662**	0.2960	Valid
PC1	.876**	0.2960	Valid
PC2	.530**	0.2960	Valid
PC3	.562**	0.2960	Valid
PC4	.908**	0.2960	Valid
PC5	.624**	0.2960	Valid
PC6	.703**	0.2960	Valid

Based on the results of the validity test conducted on 21 questions to 30 initial respondents, it can be concluded that all questions presented were valid or accepted.

Reliability Test

The Reliability test results can be seen in Table 3 and the Reliability Test Statistics can be seen in Table 4 as follows:

Table 3. Reliability Test

	r_{xy}	N	%
Cases	Valid	30	100.0
	Excluded ^a	0	.0
Total		30	100.0

Table 4. Reliability Test Statistics

Cronbach's Alpha	N of Items
.941	21

Based on the results of the reliability test carried out, it can be concluded that all the questions presented are reliable.

Data Collection

After the validity test results and reliability test results showed valid and reliable results, the presentation of the data provided was based on the results of distributing the questionnaires obtained which were quantitative. The data collection process is carried out by distributing questionnaires in the form of online to students who use the service website. The demographics of the respondents' profiles can be seen in Table 5.

Table 5. Respondents' Profile

Sample Size	Amount	Percentage (%)
Study Program		
Accounting	18	33.96
Management	22	41.51
Economics	13	24.53
Total	53	100
Batch		
2014	1	1.89
2015	1	1.89
2016	3	5.66
2017	20	37.74
2018	14	26.42
2019	8	15.09
2020	6	11.32
Total	53	100
Gender		
Man	19	35.85
Woman	34	64.15
Total	53	100

Data Analysis

In analyzing the data, previously the independent variable was correlated with the dependent variable. The correlation coefficient aims to see the strength of the linear relationship and the direction of the relationship between two

random variables. If the correlation coefficient is positive, the two variables have a unidirectional relationship. It means that, if the value of the X variable (independent) is high, the value of the Y

variable (dependent) will be high. Based on multiple linear regression analysis using IBM SPSS software, the output used for analysis is as follows:

		Kemudahan Pengguna	Kualitas Informasi	Kualitas Interaksi Layanan	Kepuasan Pengguna
Kemudahan Pengguna	Pearson Correlation	1	.753**	.779**	.499**
	Sig. (2-tailed)		.000	.000	.000
	N	53	53	53	53
Kualitas Informasi	Pearson Correlation	.753**	1	.702**	.350*
	Sig. (2-tailed)	.000		.000	.010
	N	53	53	53	53
Kualitas Interaksi Layanan	Pearson Correlation	.779**	.702**	1	.685**
	Sig. (2-tailed)	.000	.000		.000
	N	53	53	53	53
Kepuasan Pengguna	Pearson Correlation	.499**	.350*	.685**	1
	Sig. (2-tailed)	.000	.010	.000	
	N	53	53	53	53

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Figure 3. Correlation Analysis Output

Based on Figure 3, it can be said that the correlation between the User Satisfaction and Usability variables was 0.499. The correlation between User Satisfaction with Information Quality was 0.350. The correlation between User Satisfaction with Service Interaction Quality was

0.685. The average correlation was 0.511. This indicated that the relationship between the X variable and Y variable was moderately positive or it can be interpreted that the two variables were dependent.

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.710 ^a	.504	.473	.34704	1.815

a. Predictors: (Constant), Kualitas Interaksi Layanan, Kualitas Informasi, Kemudahan Pengguna

b. Dependent Variable: Kepuasan Pengguna

Figure 4. Table of Goodness of Fit Model

Figure 4 shows the measure of the Goodness of Fit model, which is shown by the value of Adjusted R Square. If the simple linear regression is shown by the value of R Square, multiple linear regression analysis should be measured through the value of Adjusted R Square. In Figure 3, it can be seen that the Adjusted R Square value was 0.710, which means that the Y diversity could be explained by X1, X2, and X3 of 71% or it could be said that User Satisfaction could be explained by Usability, Information Quality, and Service Interaction Quality

of 71 %. While the remaining 29% was in other aspects or areas outside the model used.

H1: There is a relationship between usability and user satisfaction

Based on the results of hypothesis test 1, it can be concluded that usability (X1) affects customer satisfaction (Y) of the FBE UII student letter service website. It is proven by the positive relationship between usability and user satisfaction. Respondents assumed that the



usability aspect of the website influences customer satisfaction with the perception of its design. In this usability aspect, users perceived that the website appearance is attractive so that it is considered easier to use compared to the previous service system which was done manually.

H2: There is a relationship between information quality and user satisfaction.

Based on the results of hypothesis test 2, it can be concluded that the Information Quality (X2) influenced Customer Satisfaction (Y), the website of FBE UII student letter services. This was proven by the positive relationship between information quality and user satisfaction. Respondents assumed that it would be better if a website could be assessed by the quality of the content, have a level of consistency, accuracy, and attractiveness in providing information.

H3: There is a relationship between service interaction quality and user satisfaction.

Based on the results of hypothesis test 3, it can be concluded that service interaction quality (X3) influences customer satisfaction (Y) on the website of the FBE UII student letter. It is proven by a positive relationship between information quality and user satisfaction. Respondents assumed that service interaction quality is an important factor for users because it provides security in using the service website. Thus, the user which was the FBE UII students felt secure and did not worry about using the service website again in proposing Student Letter.

CONCLUSIONS AND SUGGESTIONS

Conclusions

Based on the data analysis above it can be concluded that 3 areas influenced the satisfaction of website users which included usability, information quality, and service interaction quality. It was proven by the positive influence between the dependent variables, namely user satisfaction and independent variable in the 3 areas of the WebQual 4.0 method in the analysis. Positive results were also shown from the hypothesis carried out between the X variable and Y variable. It can be said that the service website was successful in replacing the previous system because it had a positive influence, the user's assessment of the service website was good, and users felt secure and easy; thus, users decided to reuse the service website.

Suggestions

Based on the results of the assessment derived from user perceptions and analysis and hypotheses that showed a positive relationship toward the service website, the use of the service website to serve the integrated organization service activities in one integrated service entrance was named the integrated service portal website.

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