

Implementation of Academic Information System Services Universitas Bumi Persada Using the Webqual 4.0

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Abstract. *The Academic Information System is an academic data processing service such as student data, grade data, teacher data and course data that will be selected by students. the method used in this academic information system uses quantitative research. while the Webqual 4.0 technique is used to measure, evaluate the quality of academic information system services using three dimensions namely usability quality, information quality and also service interaction quality. the results of calculations using multiple linear regression and SPSS R Square applications, while the results of student satisfaction are obtained based on a success rate of 61%, this means that many respondents chose the answer agree. Test variable X (Independent) has an influence or correlation on test variable Y (Dependent). where the t table test value is at 1.83278 which indicates that H1, H2 and H3 can be partially accepted. Partial t test results obtained from the t test with variable values X1, X2, and X3 amounting to (1,989, 3,978, and 4,189) which are stated to have an effect on variable Y.*

Keywords: *implementation, siakad, webqual 4.0*

1. Introduction

Academic Information System is an academic data processing service such as student data, grade data, teacher data and course data that will be selected by students. The academic information system or better known as siakad or information portal helps administrative staff and also college operators in filtering data so as to facilitate the process of recording data which will later be loaded into the neo feeder application (an application provided by the ministry of education and culture whose contents display student data, grades and the length of the lecture process). Currently, the use of siakad can be accessed online anywhere and anytime as long as it has an adequate internet connection so that students who are in the countryside who are on vacation due to the end of the lecture period can access the siakad portal to fill out a study plan for the upcoming semester or on a new lecture plan that will be taken according to the schedule determined by Bumi Persada University. The application of siakad aims to facilitate the implementation of lectures considering that many students come from rural areas who have difficulty and limited travel time to come to campus just to re-register and fill out a study plan. So, it is necessary to implement an academic information system at Bumi Persada University using Webqual 4.0.

Webqual is a method that measures the quality of a website by utilizing webqual 4.0 based on three areas (dimensions) such as user convenience, information quality and interaction quality, so as to provide appropriate results for each user and it is hoped that this research can produce accurate data.

2. Method

This research also uses quantitative methods with a population sample size of 100 respondents. Data collection in this study used the distribution of questionnaires, then the

raw data was processed using SPSS to produce Validity Test, Reliability Test, and Multiple Linear Regression.

3. Results and Discussions

Table 1 shows the results of the validation of questionnaire instruments that have been approved with valid criteria and can be applied and used in further experiments.

Table 1. Results of instrument validation

No Item	r count	r table	sig.	criteria
1	0.896	0.148	0.001	valid
2	0.845	0.148	0.001	valid
3	0.735	0.148	0.001	valid
4	0.810	0.148	0.001	valid
5	0.782	0.148	0.001	valid
6	0.788	0.148	0.001	valid
7	0.730	0.148	0.001	valid
8	0.762	0.148	0.001	valid
9	0.861	0.148	0.001	valid
10	0.821	0.148	0.001	valid
11	0.812	0.148	0.001	valid
12	0.838	0.148	0.001	valid
13	0.859	0.148	0.001	valid
14	0.798	0.148	0.001	valid
15	0.781	0.148	0.001	valid
16	0.799	0.148	0.001	valid
17	0.874	0.148	0.001	valid
18	0.881	0.148	0.001	valid
19	0.829	0.148	0.001	valid
20	1.000	0.148	0.001	valid

Table 2. Reliability test results

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item- Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
X1.1	81,62	254.125	.698	.726	.983
X1.2	81,52	254.632	.721	.791	.983
X1.3	81,12	256.359	.715	.616	.985
X1.4	81,42	252.536	.678	.763	.987
X1.5	80,62	252.397	.761	.961	.987
X1.6	81,89	253.008	.759	.815	.975
X1.7	81,31	252.077	.811	.861	.976
X1.8	81,45	253.516	.893	.853	.961
X2.1	81,23	251.215	.851	.867	.961
X2.2	82,12	251.616	.815	.757	.961
X2.3	81,62	252.009	.612	.726	.980
X2.4	81,52	253.616	.698	.791	.981
X2.5	81,12	253.868	.721	.616	.982
X2.6	81,42	254.397	.715	.763	.981
X2.7	81,62	254.397	.678	.961	.982
X3.1	82,10	249.075	.761	.815	.985
X3.2	81,31	254.125	.759	.861	.986
X3.3	81,45	254.632	.811	.853	.981
X3.4	81,23	256.359	.893	.867	.982
Y.1	81,62	254.397	.719	.747	.969

If there is a Cronbach Alpha value > 0.5 then the questionnaire is considered reliable. The questionnaires from variables X and Y are declared reliable or consistent and can be used in this study, as for the results shown in Cronbach Alpha, namely at a value of 0.987 from 20 question items from the SPSS output results.

Normality Test

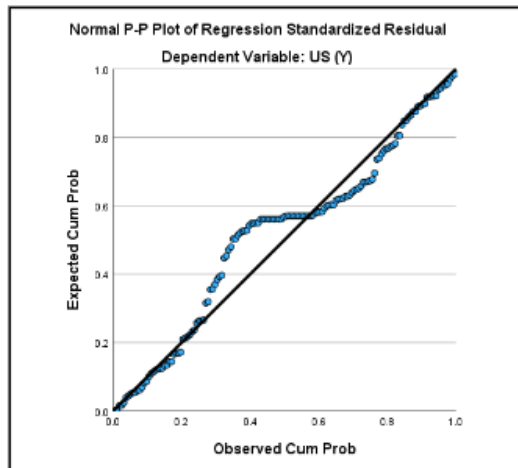


Figure 1. Probability plot normality test results

Table 3. Multicollinearity test tolerance and VIF

Model	Standardized Coefficients					Collinearity Statistics	
	B	Std. Error	Beta	t	.sig	tolerance	vif
(Constant)	-137	.225		-653	.498		
USB (X1)	.035	.021	.2035	.132	.036	.2136	.452
INQ (X2)	.037	.021	.3125	.141	<.001	.3213	.211
SIQ (X3)	.054	.022	.3221	.289	<.001	.3167	.215

Dependent Variable: US (Y)

Based on the tolerance value of the 3 variables, it shows that the value is greater than 0.100 as described in Table 3 and the VIF value is less than 10 (10%). If the tolerance value is greater than 0.100 and the VIF value is less than 10 (10%), it can be concluded that the calculation using SPSS shows that there is no multi-collinearity. The recapitulation of the tolerance and VIF multi-collinearity test can be seen in Figure 2.

Heteroskedastisitas Test

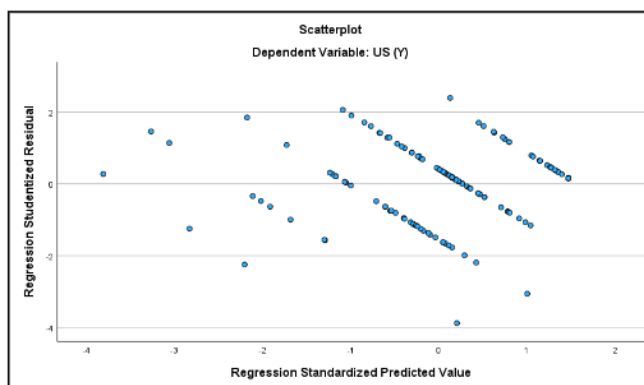


Figure 2. Scatterplot heteroscedasticity test

Figure 2 shows that there is no shape that clearly shows that the dots are in a position above and below the value of 0 on the Y-axis. Therefore, it can be said that there are no symptoms of heteroscedasticity.

Table 4. Partial t-test results

Model	Unstandardized Coefficients		Standardized Coefficients		.sig
	B	Std. Error	Beta	t	
(Constant)	-.137	.225		-.653	.498
usability information	.035	.021	.235	2.132	.029
quality service	.037	.021	.325	4.141	<.001
interaction quality	.054	.022	.322	4.289	<.001

Dependent Variable: User Satisfaction

In testing the first hypothesis (H1) it can be concluded that the value of **H0** is rejected and **H1** is accepted, because for t count the effect on the value of X1 on the value of Y is $2.132 > t \text{ table } 1.96871$. So, it can be said that the partial influence of Usability Quality on User Satisfaction can be accepted.

Testing the Second Hypothesis (H2) can be concluded that **H0** is rejected and **H2** is accepted, because the t-count for the effect of X2 on Y is $4.102 > t\text{-table } 1.97623$. This shows that the hypothesis "There is a partial (individual) effect of Information Quality on User Satisfaction" is accepted.

Third Hypothesis Testing (H3) The conclusion that **H0** is rejected and **H3** is accepted. This can be drawn from the fact that the t-count for the effect of X3 on Y is $4.319 > t\text{-table } (1.97623)$. This shows that the hypothesis "There is a partial (individual) effect of Service Interaction Quality on User Satisfaction" is accepted.

Table 5. Simultan test

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	87.874	3	29.291	110.448	<.001b
Residual	38.720	146	.265		
Total	126.593	149			

Dependent Variable: US (Y)

Predictors: (Constant), SIQ (X3), INQ (X2), USB (X1)

Table 5 shows that the results of the f test are simultaneously obtained if the Sig value is smaller than 0.05 then the variables X value and Y value affect each other simultaneously. this is seen in the level of accuracy based on the results of the simultaneous influence of X1, X2, and X3 on the value of Y equal to 0.001 less than 0.05 therefore X1, X2, and X3 can be called influential on the value of Y.

4. Conclusions

The conclusion on the percentage results obtained results in a value of 61% which means that students choose more answers agree or are satisfied with the application of the academic information system. the results of this percentage are obtained based on calculations using SPSS R Square. Students who answer these 20 questions form the dimensions of Webqual 4.0 where each criterion has the status of "valid" and "reliable". this statement can be proven based on the results of the validity and reliability tests using

SPSS calculations which have a value on student satisfaction. Based on the results of the correlation analysis, there is a substantial relationship between the value of the dependent variable (Y) and also the value on the independent variables (X1, X2 and X3) with a significant value of (0.029, 0.001, and 0.001 or less than 0.05).

As for the results of simultaneous testing, it has an impact on student satisfaction in using the academic information system. The value of multiple linear regression analysis shows the effect of positive values in autocorrelation and t test has a partial effect value which can be seen in the value of **H0** rejected and the value of **H1**, **H2** and **H3** accepted.

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