Quality Measurement of *Ug in Your Hand* Application on User Satisfaction Using Webqual 4.0 Method

Amelia Belinda Silviana, Widya Silfianti

Abstract— **Information and communication technology is part of the existing technological development in globalization era. Relating to the high mobility, the usage of mobile phone is increasing and mobile phone based applications are also emerging. Gunadarma University has a mobile phone application, that is UG in Your Hand. It is a Java-based student access mobile application for students at the University of Gunadarma. This application contains academic information, courses information and workshops organized by the University of Gunadarma. In addition, the application provides information of students' portfolio, news info on student site, services to register the seminar, and support services for students at the University of Gunadarma as well. This research was conducted with the aim of measuring the quality of UG in Your Hand application on the level of satisfaction based on users' perception as well as to determine any factors of the application that should be improved. The WebQual 4.0 method used in this study was designed to measure the quality of UG in Your Hand application. WebQual 4.0 method consists of three dimensions, namely usability, information quality and interaction quality. Multiple linear regression analysis is used to measure the impact of UG in Your Hand application quality on user satisfaction. This study used dependent and independent variables. The independent variables were taken from WebQual dimensions of the usability, information quality, and interaction quality. Meanwhile, the dependent variable was the user satisfaction. The results of this research, based on descriptive analysis, show that the highest average value is owned by the dimensions of information quality. Based on the multiple linear regression analysis consisting of f significance tests, t significance tests, and the coefficient of determination, variables of usability, quality of service interaction, and information quality have effects on the user's satisfaction variables.**

Index Terms— **WebQual, Application Quality, User Satisfaction**

I. INTRODUCTION

Information and communication technologies are part of the existing technological development in this globalization era. Various facilities, quality, and benefits are offered to enable people to access the information from anywhere and at anytime without limitation of distance and time. One of the technologies which is developing rapidly nowadays is technology on mobile phones. Mobile phone evolved into a multifunctional gadget that gives positive impacts to humans, particularly in increasing the technology of information dissemination.

Cellular communication media is one of the facilitators of information dissemination. The processes to obtain information through mobile phone can be performed anywhere and anytime. According to a survey which was conducted by APJII and PUSKAKOM UI in the end of 2014, of 88.1 million active internet users in Indonesia, 85% users accessed the internet using a mobile phone as shown in Figure 1.1. (CNN Indonesia, 2015). These situations have turned in to an obstacle and a challenge to be overcame by application developers. Hence, the mobile phone-based applications producers are competing each other to develop the best applications and to provide the best services of their applications in order to attract the users to keep using the application.

UG in Your Hand Application is one of mobile phone-based applications. *UG in Your Hand* application is a Java-based student access mobile application for students at the University of Gunadarma. This application contains academic and courses information as well as workshops organized by the University of Gunadarma. Besides, the application also provides a portfolio of student information, news info on student site, service to register the seminar, and support services for students at the University of Gunadarma (UGPEDIA, 2012). This application is a breakthrough with several benefits for the college and for students at the University of Gunadarma. By the existence of the application facility, it is expected that the information dissemination in University of Gunadarma will be conducted effectively.

However, there were no factual evidences yet whether the application have provided the users with good information effectively or not, and wether the application has given advantages or in accordance with the user's needs or not. Since it's launching, the *UG in Your Hand* application has never been tested related to the quality performance level of the *UG in Your Hand* application by the perception of the end user as feedback to the developer. Basically, someone will use the website service or application to find information quickly and easily obtained (Gulliksons et al., 1999). The users will feel satisfied if the website service or application provided is in accordance with the perception of the information quality services and the level of user expectations. Utilization and usability of the website or application are viewed on how well and how effective the function that the user can navigate. It is one of the key factors of quality of website services or applications (Poon, 2002).

This study is aimed at measuring the application quality of UG in Your Hand on the level of user satisfaction so that the

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researchers know the attributes or features of any application that is good or that still require improvement. The method used in this research was the method WebQual 4.0. The scope of this study was limited on discussion of the quality measurement of mobile phone applications with the level of user satisfaction. Mobile phone application that was used in this research was the application of UG in Your Hand. Technique of data retrieval was conducted by distributing questionnaires to the respondents. Respondents in this study were students at the University of Gunadarma in 2013 and 2014 generation that never use the *UG in Your Hand* application.

The questionnaires were distributed to 100 respondents in the sample population. The application performance of UG in Your Hand are analyzed and measured using methods WebQual 4.0, where there are three-dimensional area that is Usability (Usability), Information Quality (Information quality), and Interaction Quality (Quality of Service Interactions). Meanwhile, to measure the impact of the application quality of user satisfaction the researcher uses multiple linear regression analysis. The purpose of this study is to measure the quality of applications UG in Your Hand and to determine the influence of the quality of existing applications today on the level of satisfaction as perceived by the end users as well as to determine the factors that need to be maintained and to get a major concern in improving the quality of application of UG in Your Hand which is compatible with the expectations and perceptions of users.

II. LITERATURE REVIEW

WebQual is one of the methods or techniques in measuring the quality of web sites or applications based on the perception of the end user. This method is a development of ServQual widely used earlier in the measurement of service quality. WebQual instrument applies an approach of perception and the importance of user. If WebQual 1.0 emphasizes the analysis of information quality and has a deficiency in service interaction, on the contrary, WebQual 2.0 more focuses on the analysis of the interaction but it seems lacking on the analysis of the information quality. Both instruments are tried to be applied to a study of the quality of an online auction site (Barnes, S., & Vigden, R., 2002).

The results of the research show that the site quality analysis is categorized into three different scopes, namely: site quality, information quality provided, and quality of interaction offered by the service. The result of this study is known as WebQual 3.0. Further analysis of WebQual 3.0 generated the WebQual 4.0 model approach which eventually replace the first category, the site quality, into the category of usability (Barnes, S., & Vigden, R., 2003).

The dimension of WebQual4.0 consists of usabilty, information quality and interaction quality

Table 1. WebQual 4.0 Instrument (Barnes, S., & Vigden, R., 2002)

Quality	Description
Usability	
1	I find the site easy to learn to operate
2	My interaction with the site is clear and understandable
3	I find the site easy to navigate
4	I find the site easy to use
5	The site has an attractive appearance
6	The design is appropriate to the type of site
7	The site conveys a sense of competency
8	The site creates a positive experience for me
Information Quality	
9	Provides accurate information
10	Provides believable information
11	Provides timely information
12	Provides relevant information
13	Provides easy to understand information
14	Provides information at the right level of detail
15	Presents the information in an appropriate format
Interaction Quality	
16	Has a good reputation
17	It feels safe to complete transactions
18	My personal information feels secure
19	Creates a sense of personalization
20	Conveys a sense of community
21	Makes it easy to communicate with the organization
22	I feel confident that goods/services will be delivered as promised
Overall impression	
23	My overall view of this Web-site

Source : http://www.webqual.co.uk/instrument.htm

Reference and study materials for recent research are taken from some previous studies. The study entitled "Measuring Quality Improvements Website: A Case Study of the Forum on Strategic Management Knowledge Exchange", measures the quality improvement of web sites provided by the OECD based on survey results. The site is checked before and after the re-design process. The quality measurement used in the research is instruments of WebQual which consist of usability, information quality, and service interactions quality to provide an assessment of *e-commerce* and *e-government*. The results of this study demonstrate not only the strengths and weaknesses of the site, but also show differences in the user the impression, namely the citizen. The research has implications for *e-government* web that should be improved in terms of quality of interactions service to meet the needs of the community. (Barnes, S., & Vidgen, R., 2003)

Others research that use WebQual methods to measure the quality is titled "Evaluating WAP News Sites: The WebQual/M Approach", which evaluates wireless internet news sites use WebQual/m instrument. From the initial application in the domain of traditional Internet Web site, the instrument has been adapted to the site delivered using Wireless Application Protocol (WAP). WebQual/m instrument is used to assess customer perception of information, sites and user-oriented quality. In specific scope, the quality of the three WAP news site based in the UK are assessed through a questionnaire online. The results are reported, analyzed and showed considerable variation in the offerings from news sites. The findings and their implications for mobile commerce are discussed with some conclusions and directions for further research (Stuart J. Barnes, Kenny Liu, Richard T. Vidgen, 2001).

Gao, Xiuyuan M.S. (2013), conducted a study entitled "The Influence of Mobile Website Quality on Consumer Satisfaction and Behavior" analyzed how mobile sites provide a good shopping services to customers. The object of this study is the correlation between the website quality and student satisfaction on website related with the shopping experience by mobile phone, and what factors can influence their intention to return to the website and / or purchase on the website. Five dimensions of website quality in the reasearch are information quality, navigation, visual appeal, response time and interactivity. The results of this study show that all dimensions of quality mobile web site, except navigation, positively related to customer satisfaction with the shopping experience via their mobile phones and consumer satisfaction is positively related to their intention to review and / or purchase the product in the context of mobile web sites.

Another study using the application of the WebQual Methods in Quality Measurement of College, Website Services, is to measure the website quality using WebQual methods. The independent variables used in this research are the usability, information quality and interaction services. Meanwhile, the dependent variable is the user's satisfaction. The method used is multiple linear regression analysis. Multiple linear regression analysis is used to predict the condition of independent variables on the dependent variable. Result of regression analysis is a form of significance coefficients for each independent variable that determines the condition of accepting or rejecting the null hypothesis. The results of this analysis show that three variables have influences on user's satisfaction. The following variables are ordered from that most influence on the user's satisfaction, namely the interaction of service, quality and usability of information. (Sa'uda, Siti and Nyimas Sopiah, 2014)

III.   RESEARCH METHOD

This research was focused on the measurement of the quality of a mobile phone application on satisfaction of the users. Mobile phone application that was used in this research was the application of UG in Your Hand. The respondents of this study were Gunadarma University students who never used the application UG in Your Hand. The population in this study was from the class of 2013, 10270 students, and 2014 consist of 12354 students, so that the total population was 22624 students. Furthermore, the phase sampling of respondents in this study was applied sampling by Taro Yamane in (Sarwono, 2006) which is described in the following formula:

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

Description
n = Number of samples
N = Number of Population (22624)
d = Number of Precission 10 % or d =0,1

$$n = \frac{22624}{22624(0,1)^2 + 1}$$
$$n = \frac{22624}{226,24 + 1}$$

n = 99,56 becomes 100 respondents /students

Thus, the numbers of samples of the research are 100 students

In the study, the researcher used type of primary data. Primary data is a source of data obtained directly, not through an intermediary. The primary data is conducted using the techniques of data collection in the form of a questionnaire. Each questionnaire contains statements which indicate the variables / objects explanation. Statements that are formed in this study refer to the instruments WebQual. The scale used in this study was a five-point Likert scale (1 = strongly disagree, 2 = disagree, 3 = adequate, 4 = agree, 5 = strongly agree). In this study, the data obtained are assumed in form of interval, so data can be used for parametric statistics such as multiple linear regression analysis.

The analytical method used in the research is the Linear Regression which predicts how far the changes in the value of the dependent variable when the independent variables are manipulated / permuted or raised and lowered. To examine the analysis of the factors that affect the quality of the application of UG in Your Hand to satisfaction for users, this study uses a dependent variable (Y), and three independent variables (X), so that multiple linear regression method is used in the analysis. Thus the research model used in this study is as follows:

$Y = A + B_1X_1 + B_2X_2 + B_3X_3 + e_i$
Where :
Y: Satisfaction for the users of UG in Your Hand application
A: The value of Y when X = 0 (constant prices)
B1: Figures direction or regression coefficient, which indicates the number of increase or decrease in the dependent variable (user satisfaction) that is based on the changes in the independent variable (usability)
B2: Figures direction or regression coefficient, which indicates the number of increase or decrease in the dependent variable (user satisfaction) that is based on the changes in the independent variable (information quality)
B3: Figures direction or regression coefficient, which indicates the number of increase or decrease in the dependent variable (user satisfaction) that is based on the changes in the independent variable (quality of interaction)
X1: Usability
X2: The information quality
X3: The quality of interaction
ei : Other Variables
The outline of the study is divided into the following several stages:
1.   Validity and Reliability Tests
Validity and reliability tests are conducted to measure whether the items on the questionnaire used in the study are valid and reliable or not. The items to be measured are covered in the three independent variables namely usability, information quality and quality of interaction and the independent variable (namely the user satisfaction UG applications in Your Hand). The validity test as item selection criteria based on the correlation of items - total, is used restriction coefficient> 0:30. All items that achieve a correlation coefficient, minimum 0:30 of the distinguishing data is qualified as part of a psychometric test (Anwar, 2012). The indicators of reliability test measurements according to Sekaran (2006) are divided into the level of reliability with the following criteria:
If alpha or r count:

a. 0.8 - 1.0 = Good reliability
b. 0.6 - 0.799 = Reliability accepted
c. less than 0.6 = Reliability unfavorable
2. Classical Assumption Test (Normality Test, Multicollinearity Test, Autocorrelation Test, Heteroscedasticity Test)

Normality test is a classical assumption test that will test the independent variable data and dependent variable data in the regression equation whether it is generated in normal distribution or in not normal distribution. The distribution of data is said to be normal if the p-value obtained in the Kolmogorov-Smirnov test is > 0.05 and is said to be not normal if p <0.05. Multicollinearity test aims to test whether the regression model found a correlation between independent variables. Multicollinearity is indicated by the table Coefficient, ie on column Telerance and column VIF (Variance Inflated Factors). When the value of VIF is > 10, it indicates the occurrence of multicollinearity. The autocorrelation test aims to test whether the linear regression model has no correlation between bullies error in period t with bullies error in period t-1 (previous). Heteroscedasticity test aims to test whether the regression model occur inequality residual variance from one observation to another observation. In SPSS, whether there is heteroskedastity or not can be seen in the table Correlations value Sig of each the independent variable. If the value is > 0.05, it means indicate not happen heteroskedastity.

3.   Test Using Multiple Linear Regression Analysis (Test Coefficient of Determination, f test, t test)

Test of Determination Coefficient (R-Squares) shows how much the independent variables can explain the dependent variable; meanwhile the rest is explained by other variables. R-square value ranges from 0 to 1, if it is close to 1, it means the stronger variable – where the independent variables can predict / explain the dependent variable. F-test is used to test the effect of independent variables together (simultaneously) on the dependent variable using a significance level of 0.05 with the following provisions: Significance> 0.05 then H_0 is accepted otherwise Significance <0.05 then H_0 is rejected. T test in multiple linear regressions basically aims to determine the individual effect of an independent variable on the dependent variable. If the result value of significance t test, P <0.05, it can be concluded that partially the independent variables significantly influence the dependent variable.

IV.   RESULTS AND DISCUSSION

The research was conducted by distributing questionnaires to 100 students at the University of Gunadarma using *UG in Your Hand* application. Figure 1 is a view of *UG in Your Hand* application interface.

Figure 1. Display of UG in Your Hand Application

Results and discussion are divided into several sections as follows:
1. Validity and Reliability Tests

Data analysis was performed using SPSS 22 software. The first step in the research is testing the validity and reliability of the statements in the questionnaire. Validity and reliability test was performed for overall dimensions. Table 2 is the result of the validity test in the research. Table 3 is the result of the reliability test on quality assessment on *UG in Your Hand* Application.

Table 2. The result of overall dimensions Validity test on Quality Assessment of *UG in Your Hand* Application

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
A1	86.270	80.644	.317	.871
A2	86.630	79.286	.378	.869
A3	86.700	79.101	.396	.869
A4	86.360	78.718	.474	.867
A5	87.010	78.879	.388	.869
A6	86.400	78.485	.448	.867
A7	86.760	78.427	.463	.867
A8	86.820	77.462	.457	.867
B1	86.500	78.010	.463	.867
B2	86.420	77.014	.477	.866
B	86.70	77.52	.421	.868

3	0	5		
B4	86.440	78.249	.518	.866
B5	86.430	78.692	.467	.867
B6	86.830	79.941	.351	.870
B7	86.510	78.899	.406	.868
C1	86.160	76.823	.498	.866
C2	86.750	79.967	.348	.870
C3	86.900	79.242	.350	.870
C4	87.390	77.291	.338	.872
C5	87.150	74.977	.484	.867
C6	87.480	75.909	.468	.867
C7	87.050	77.482	.397	.869
D1	86.200	77.111	.628	.863
D2	86.220	78.840	.412	.868
D3	86.640	74.798	.587	.863

On Table 2, A1-A8 are statements of usefulness dimensions and B1-B7 are statements of Information Quality dimensions. C1-C7 are statements of Interactions Quality dimensions and D1-D3 are statements of User Satisfaction dimension. From the table above, it can be seen the *corrected item-total correlation* value for 25 statement items which were tested and resulting 25 items of the statement reached the correlation coefficient value for more than 0:30. Thus, all statement items which were included in the three-dimensional WebQual and user satisfaction dimensions on the questionnaire of assessing the quality of *UG in Your Hand* applications was stated as valid and psychometrically qualified as part of the questionnaire.

Table 3. The result of overall dimensions Reliability test on Quality Assessment of *UG in Your Hand* Application

Reliability Statistics

Cronbach's Alpha	N of Items
.872	25

From Table 3, it can be seen that the value of Cronbach's alpha for 25 statement items tested resulting that those statements were included in the criteria of 0.8 - 1.0. Thus, all item of statements were included in the three-dimensional WebQual and dimension of user's satisfaction in the questionnaire on assessing the quality of *UG in Your Hand* applications was stated as good in reliability and psychometrically qualified as a part of questionnaire.

2. Classical Assumption Test

The first step was conducting normality test as part of classical assumption test. The purpose of normality test is to determine whether regression equation generate normal or abnormal distribution. Figure 2 is a normal graphic of P-P Plot.
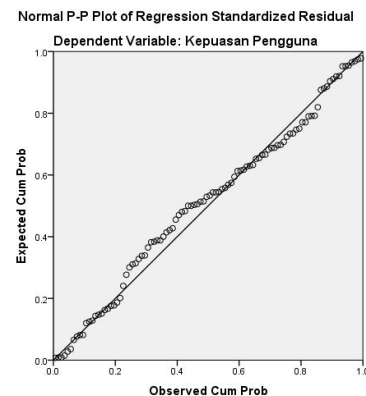
Dependent Variable :User's Satisfaction

Figure 2. Normality test using Normal Graph of P-P Plot

On normal graph of P-P Plot, normal residue is scattered data following the normal distribution function which is spread along a diagonal line z. When the distribution of those points approaching or meeting the diagonal lines, it can be said that the residual data is normally distributed. On figure 2, the distribution of the points of the P-P Plot norml graph relatively close to the straight line, so it can be concluded that the residual data is normally distributed.

Tabel 4. Result of Kolmogorov-Smirnov Test

One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		100
Normal Parameters[a,b]	Mean	0E-7
	Std. Deviation	1,33676325
Most Extreme Differences	Absolute	,070
	Positive	,054
	Negative	-,070
Kolmogorov-Smirnov Z		,704
Asymp. Sig. (2-tailed)		,705

Based on Table 4, it can be seen that the p-value or the value *Asymp.Sig.* (2-tailed) of 0.704 which is greater than the probability value $(\alpha) = 0.05$, so it can be concluded that the distribution of residual values (e) are normally distributed, thus, the regression model used in this study is feasible.

The second step was performing the multicollinearity test to determine whether the correlations between independent variables in this study exist or not. Table 5 is the results of multicollinearity Test.

Table 5. Result of Multicollinearity

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.863	1.392		.620	.537		
	System Usage	.179	.051	.331	3.492	.001	.686	1.457
	Indormation Quality	.091	.047	.175	1.921	.058	.744	1.345
	Interaction Quality	.142	.038	.317	3.708	.000	.844	1.185

a. Dependent Variable: User's Satisfaction

Table 5 indicates that the value of tolerance of the system usage variable = 0.686, the information quality variable = 0.744, and the interaction quality variable = 0.844, while VIF value of the use of system variables = 1.457, the information quality variable = 1.345, and the interaction quality variable = 1.185. The value tolerance on all independent variables above 0.10 and VIF on all independent variables is less than 10, and then it can be concluded that there is no multicollinearity.

The third step was applying autocorrelation test. To diagnose the test, Durbin Watson test was used by determining the lower limit value (dl) first, and the upper limit value (du) by the number of samples (n) = 100, and the number of independent variables 3 (k = 3). And then, as the value of Durbin Watson Table, it was obtained values for dl = 1.6131, du = 1.7364. The autocorrelation test in this study resulted in the value of d = 1.869, inline with the value in the column of Durbin - Watson in Table 6.

Table 6. Autocorrelation Test Results

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.639[a]	.409	.390	1.3575	1.869

a. Predictors: (Constant), Interaction Quality, Information Quality, System Usage
b. Dependent Variable: User's Satisfaction

So, from the Durbin-Watson criteria, it can be seen the following table:

Table 7. Durbin-Watson Test Criteria

Durbin-Watson Criterias	Durbin-Watson Values	Description/Decision
0 < d < dl	0 < 1,869 < 1,613	Positive Autocorrelation Exists
dl ≤ d ≤ du	1,613 ≤ 1,869 ≤ 1,736	No Decision
4- dl ≤ d < 4	2,387 ≤ 1,869 < 4	Negative Autocorrelation Exists
4 – du ≤ d ≤ 4-dl	2,264 ≤ 1,869 ≤ 2,387	No Decision
du < d < 4 – du	1,736 < 1,869 < 2,264	No Positive or Negative Autocorrelation

Table 7 shows that the value of Durbin-Watson count equal to 1,869 greater than the upper limit (du) = 1,736 and less than 4 - du (4 - 1,736 = 2,264) as pointed in last row of Table 7. Thus, it can be concluded that there is no positive or negative autocorrelation, so that the regression analysis in this study can be done.

The next step was conducting the heteroscedasticity test by using Spearman's Rank Correlation test. If an independent variable has a correlation of Spearman's Rank with residual absolute value, not significant (sig. (2-tailed)> α = 0.05), the independent variables are not experiencing heteroskedastisitas (Table 10).

Table 8. Result of Heteroscedasticity Test

Correlations

			System Usage	Information Quality	Interaction Quality	ABS_RES
Spearman's rho	System Usage	Correlation Coefficient	1.000	.356**	.373**	-.020
		Sig. (2-tailed)	.	.000	.000	.846
		N	100	100	100	100
	Information Quality	Correlation Coefficient	.356**	1.000	.269**	.005
		Sig. (2-tailed)	.000	.	.007	.962
		N	100	100	100	100
	Interaction Quality	Correlation Coefficient	.373**	.269**	1.000	.152
		Sig. (2-tailed)	.000	.007	.	.132

		100	100	100	100
ABS_RES	Correlation Coefficient	-.020	.005	.152	1.000
	Sig. (2-tailed)	.846	.962	.132	.
	N	100	100	100	100

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

Based on Table 8, it can be seen that the sig. (2-tailed) on column ABS_RES in each of independent variables correlated with the absolute value of residues is greater than the specified significant value of α of 0.05, so it can be concluded that there is no heteroscedasticity in this study. Hence, the regression analysis in this study may be used or carried.

3. Multiple Linear Regression Analysis

Determination coefficient test (R-Squares), from Table 9, it can be seen that the determination coefficient (R-Square) = 0.409. This means that the independent variable which is consist of usability, information quality, and interactions quality explains 40.9% of the variability of the dependent variable, that is user satisfaction, while the rest of the variability is explained by other variables outside this research model. For the value of correlation coefficient, which is R, in the table of summary model 9, describe the extent of the relationship between independent variables and the dependent variable.

Table 9. Determination coefficient (R-Square)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.639[a]	.409	.390	1.3575

a. Predictors: (Constant), Interaction quality, information quality, system usability

f test (ANOVA) to determine the accepted hypothesis wether H_0 or H_1. If the value of F P <0.05, then all oif the independent variables significantly influence the dependent variable, which means that the null hypothesis is rejected.

Table 10. Results of F Significance Test

ANOVA[a]

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	122.253	3	40.751	22.114	.000[b]
Residual	176.907	96	1.843		
Total	299.160	99			

a. Dependent Variable: User Satisfaction
b Predictors: (Constant), Interaction quality, information quality, system usability

On this hypothesis testing, in table 10, the significant level of value is 0,000 <0,050 which explained that the null hypothesis is rejected. So that, it can be concluded that the usefulness, information quality, and interaction quality significantly affect user's satisfaction of *UG in Your Hand* applications simultaneously.

T significance test aims to determine the individual effect of one independent variable on the dependent variable.

Tabel 11. Result of T significance test

Coefficients[a]

Model	Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
1 (Constant)	.863	1.392		.620	.537
Penggunaan Sistem	.179	.051	.331	3.492	.001
Kualitas Informasi	.091	.047	.175	1.921	.044
Kualitas Interaksi	.142	.038	.317	3.708	.000

a. Dependent Variable: User's Satisfaction

From the results of the analysis shown in Table 11, it can be seen that the multiple linear regression model in this study is:

$$Y = 0.863 + 0.179X1 + 0.091X2 + 0.142X3$$

Based on the results of t significance test, it can be known that the value of usability variable significance is 0.001 <0.05. Thus, it can be concluded that usability variables significantly influence user's satisfaction of *UG in Your Hand* application. Furthermore, the variable of information quality obtained significance value of 0.044 <0.05, which mean that variable of information quality significantly effect user's satisfaction of *UG in Your Hand* application. As for the interaction quality variable has significance value of 0.000 <0.05, so it can be concluded that the interaction quality variable significantly influence user's satisfaction of *UG in Your Hand* application.

Following equation can be derived rrom the multiple linear regression used in this study, $Y = 0.863 + 0.179X1 + 0.091X2 + 0.142X3$ where 0.863 is a constant value of user's satisfaction or a fixed value if the value of X1, X2, X3 equal to 0. If the value of usability variable rose 1% then the value of user's satisfaction increased by 0.179. If the value of the information quality variable rose 1% then the value of user's satisfaction increased by 0.091. If the value of interaction quality variable rose 1% then the value of user's satisfaction increased by 0,142.

Positive relationship occurs between variable X1 usability, variable X2 information quality, variable X3 interaction quality to user's satisfaction. The sequence of influential variables is usability, interaction quality and information quality. Based on the average value of each dimension, variables that need more attention is interaction quality, although other variables also need to be improved so that the quality of the application will be better.

CONCLUSIONS AND SUGGESTIONS

The quality measurement of *UG in Your Hand* aplication as a mobile phone-based application on satisfaction of users using WebQual 4.0 has been successfully conducted. The variables used in this study were drawn based on dimensions of WebQual 4.0 consisting of usefulness, quality of information, and quality of interaction as independent variables and user satisfaction as dependent variable. Based on the research, the variables of usefulness, information quality and interaction quality have significant effects on user's satisfaction of UG in Your Hand applications, simultaneously and individually as well. This positive relationship occurs between the variables of usefulness, information quality and interaction quality to user satisfaction. The sequence of influential variables is usefulness, interaction quality and information quality. Based on the average value of each dimension, variables that need more attention is the interaction quality, although other variables need to be improved as well so that the quality of the application will be better.

The results of this study can be used subsequently to propose the improvement of UG in Your Hand application to the research and development team. Improvement of application quality in the interaction quality dimensions needs to be considered to increase the level of application quality. On the dimension of interaction quality, the process of the quality services for the students should be constructed to make it easier for the students to communicate with the university by the availability of real-time chat room. Therefore, students will be more interested in using UG in Your Hand application in the future. In measuring the quality of the application and its effects, other methods can be used, including other variables to produce more significant values.

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