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ANALYSIS QUALITY OF E-LEARNING INSTITUTE OF CHRISTIAN RELIGION TARUTUNG STATE (IAKN) ON USER SATISFACTION USING WEBQUAL 4.0 METHOD

Frans Denni Immanuel Sinaga[1], Iin Seprina[2]

[1,2] Faculty Of Computer Science, Bina Darma University, Jl. General Ahmad Yani No.3,9/10 Ulu, Sub-District Across From Ulu 1, Palembang City, South Sumatra

E-mail: frans.sinaga003@gmail.com[1], iin_seprina@binadarma.ac.id[2]

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ABSTRACT

The web is a complete data provider and is an important aspect in various fields, especially learning because it can be accessed without limits and is easy to use. This research certainly has the aim of achieving the value of user satisfaction and finding the factors that affect the quality of the E-Learning website. To support this research, researchers carried out observations, similar literature research, interviews and questionnaires as a collection of research information. In this research, the quality of the IAKN Tarutung E-learning web was measured using the Webqual 4.0 procedure. The source of information for this research was obtained through a questionnaire processed from IAKN Tarutung students with a population of 2828 and illustrations of 350 respondents. As a result, research can be stated that web quality simultaneously influences the creation of user satisfaction. On the other hand, partially webqual size is information and usability does not significantly affect user satisfaction. This means that data size and usability must be increased again so that user satisfaction can be created better.

1. Introduction

As a result of the Covid-19 pandemic, it has greatly affected all aspects of life, including learning. Based on the Circular Message of the Minister of Learning and Culture No. 4 of 2020 regarding the implementation of learning policies in the emergency period of the spread of Corona Virus Disease (Covid-19) informing all participants and learning organizers to conduct Education from Home. process through online or distance education. The Covid-19 pandemic that has lasted more than 1 year requires the implementation of distance learning for all levels of learning, from students, teachers, lecturers, tutors to parents. The tsunami of online education has occurred in almost all parts of the world during the Covid-19 pandemic. Distance education, which was previously an alternative education that meets face-to-face education in the midst of the Covid-19 pandemic, is one of the methods of conducting learning.

Especially at the university level, the use of e-learning is a necessity in addition to the use of other online educational media. The growth of online learning facilities, especially e-learning, is currently needed to support distance education activities and activities, especially in the university area. E-learning has become a necessity in the world of learning. Where "e" can be referred to in e-learning refers to how learning is digitized so that it can be put in electronic form on the contrary "learning" in e-learning refers to what includes content as well as procedures to help students master the content. In this case, e-learning also helps achieve learning objectives. For Daxiang Dai& Gaofeng Lin Online education requires educators to evaluate the effectiveness and familiarize themselves with educational needs. This means trying to always fulfill educational aspects such as knowledge, morals, skills, intelligence and aesthetics. a website, especially for universities, is very necessary. The making of university e-learning to facilitate distance learning needs to be measured for its effectiveness as an evaluation material.

Tarutung State Christian Institute is one of the most popular public universities in North Sumatra. Tarutung State Christian Religious Institute has e-learning that is engaged in various fields of assisting

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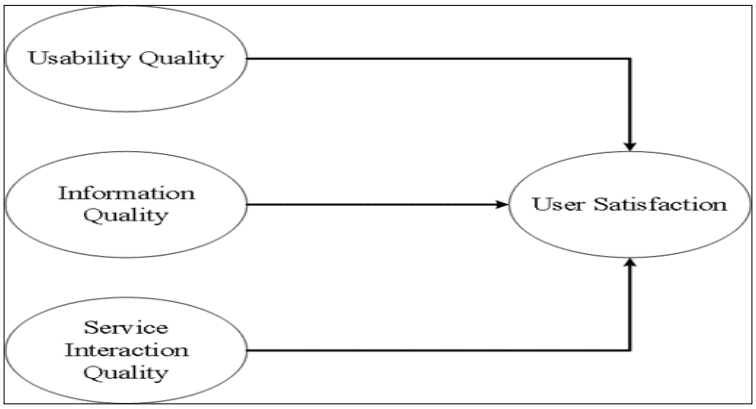
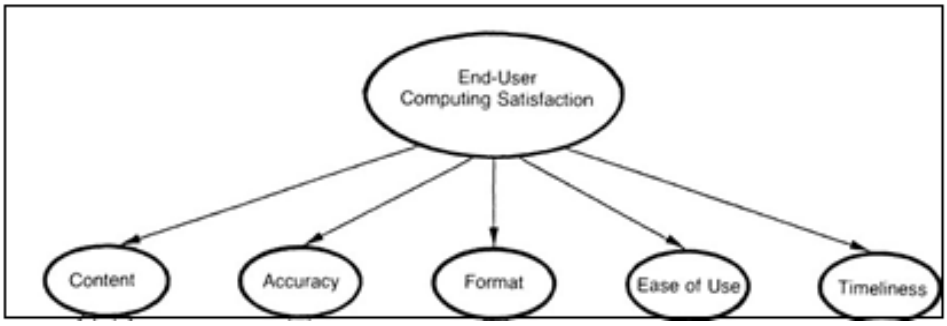
operational activities and one of them is the elearning.iakntarutung.ac.id site as the name implies. This website is used for student learning activities in online lectures, especially when online during this Covid-19 period.

This research takes the case study of the e-learning Institute of Tarutung State Christian Religion because the website has never been measured before and also aims to measure the quality of the website. Measurement of Website Quality is carried out based on the point of view of user satisfaction (user satisfaction) in order to make optimal use of the Website. Therefore, it is necessary to analyze what factors affect the level of quality in its use. The results of this analysis can determine the factors that influence to improve the website seen from user satisfaction. One method that can be used is the Webqual 4.0 method. The webqual method is a measurement method to identify something on the web because a good web quality can be seen and measured through an easy-to-use web size, explanation of use, traceability, usage, energy. attractiveness, good appearance, good competence, share new experiences.

Based on the description that the author has told above, the author is interested in taking the title of the thesis, namely "Analysis of the E-learning Quality of Tarutung State Christian Institute (IAKN) on User Satisfaction Using the Webqual 4.0 Method".



Picture 1. Model Webqual 4.0



Picture 2. End - User Computing Satisfaction Model

2. Methods

2.1 Population and Sample

The population and sample are part of the study and determine how many samples will be used in this study.

2.1.1 Population

The population is defined as an area of generalization consisting of objects, or subjects that have certain qualities and characteristics that have been determined by the researchers, after which they are studied and conclusions are drawn (Sugiyono, 2015). Population writing was taken as a task as students of the Tarutung

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State Christian Institute as many as 2828 students from 10 research programs (PDDikti Odd Year Reporting Data, 2021).

2.1.2 Sample

This research was taken according to the webqual method, namely using the Slovin formula because in drawing conclusions the sample must be representative so that the research results can be generalized and the calculation does not require a table of the number of samples, but can be done with simple formulas and calculations. Based on the number of population shows a number greater than 100 so that in this study an error limit of 5% was used, sample of respondents from these calculations, then the number of samples to be studied will be 350 students.

2.2 Method of Collecting Data

In an effort to collect data and information needed, this study uses the following data collection methods

2.2.1 Observation Method

The researcher conducted an analysis and direct observation of the E-learning system of the Faculty of Education, Tarutung State Christian Institute.

2.2.2 Questionnaire Method

To find out how good user satisfaction is with the E-learning website of the Tarutung State Christian Institute, the researcher asked questions to the students of the Faculty of Education using a questionnaire by distributing it via a google form link.

2.2.3 Documentation Method

Documents are sources of information used to fulfill research, in the form of written sources, films, photographs (images), and monumental works, all of which share data for the research process. Document research fulfills the use of observation and interview procedures in qualitative research. Moreover, the credibility of the results of this qualitative research will continue to be great when using this document research in the method of qualitative research.

3. Result and Discussion

The process of collecting research data is done by distributing questionnaires indirectly to respondents. Indirect distribution (through online questionnaires), this online questionnaire uses the help of Google Forms which are known to be commonly used in online questionnaires. The distribution of this questionnaire is carried out within a period of two weeks, starting from March 2022 to achieve the target of the desired number of samples.

All online questionnaires that have been collected, processed and classified using Microsoft Excel and SPSS. Questionnaire data collection resulted in 350 questionnaires which can be continued to the next stage

3.1 Result of Analysis of Measurement Model (Outer Model)

This session tries to analyze the measurement model, where the analysis of the measurement model consists of four testing sessions, namely individual item reliability, internal consistency reliability, average variance extraction, and discriminant validity (Sarstedt, Ringle, & Hair, 2017). (Wong, 2013) (Nugroho & Sari, 2016) (Subiyakto, Ahlan, Kartiwi, & Sukmana, 2015).

3.1.1 Individual Item Reliability

Referring to the standard outer loading value, after going through the tests on SmartPLS 3.0, all indicators have met the requirements of more than 0.7.

TABLE 1
OUTER LOADINGS VALUE

	Content	Customer Satisfaction	Information Quality	Service Interaction Quality	Usability Quality
CON 1	0,904				
CON 2	0,912				
CON 3	0,862				
CON 4	0,888				
CUS 1		0,882			
CUS 2		0,904			
CUS 3		0,872			
CUS 4		0,907			

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INQ 1	0,834			
INQ 2	0,882			
INQ 3	0,742			
INQ 4	0,811			
SIQ 1		0,739		
SIQ 2		0,830		
SIQ 3		0,843		
SIQ 4		0,792		
USQ 1			0,815	
USQ 2			0,859	
USQ 3			0,890	
USQ 4			0,715	

3.1.2 Internal Consistency Reliability

The test results show that the composite reliability results show a value above 0.7 and fall into the Very Reliable category in the reliability level table (Hair, Black, Babin, & Anderson, 2010).

TABLE 2
COMPOSITE RELIABILITY VALUE

	Composite Reliability
Content	0,939
Customer Satisfaction	0,939
Information Quality	0,890
Service Interaction Quality	0,878
Usability Quality	0,892

3.1.3 Average Variance Extracted (AVE)

The test results show that the AVE value for each variable has exceeded the minimum value of 0.5. Latent variables (constructs) can explain the average of more than half the variance of the indicators, can be said to be good, and meet the requirements in the AVE value test.

TABLE 3
AVERAGE VARIANCE EXTRACTED VALUE

	Average Variance Extracted (AVE)
Content	0,795
Customer Satisfaction	0,795
Information Quality	0,671
Service Interaction Quality	0,643
Usability Quality	0,676

3.1.4 Discriminant Validity

Based on the results of cross loading checks between indicators and Fornell-Larcker's cross loading, Table 4 has shown that the value of cross loading indicators with constructs is higher than the correlation with other block constructs.

TABLE 4
CROSS LOADING VALUE

	Content	Customer Satisfaction	Information Quality	Service Interaction Quality	Usability Quality
CON 1	0,904	0,660	0,591	0,700	0,550
CON 2	0,912	0,693	0,624	0,638	0,545
CON 3	0,862	0,676	0, 605	0,607	0,522
CON 4	0,888	0,663	0,670	0,586	0,599
CUS 1	0,720	0,882	0,597	0,660	0,547
CUS 2	0,622	0,904	0,673	0,652	0,617
CUS 3	0,635	0,872	0,631	0,668	0,571
CUS 4	0,713	0,907	0,685	0,725	0,691
INQ 1	0,550	0,621	0,834	0,512	0,473
INQ 2	0,642	0,650	0,882	0,609	0,515
INQ 3	0,498	0,504	0,742	0,467	0,425

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INQ 4	0,589	0,592	0,811	0,607	0,669
SIQ 1	0,588	0,644	0,550	0,739	0,620
SIQ 2	0,588	0,586	0,515	0,830	0,532
SIQ 3	0,639	0,596	0,534	0,843	0,547
SIQ 4	0,544	0,601	0,550	0,792	0,423
USQ 1	0,526	0,566	0,543	0,530	0,815
USQ 2	0,501	0,499	0,487	0,520	0,859
USQ 3	0,663	0,607	0,573	0,635	0,890
USQ 4	0,333	0,556	0,477	0,488	0,715

3.2 Result of Model Structure Analysis (Inner Model)

3.2.1 Path Coefficient

The test results state that the 4 (four) paths in the proposed research model have values above the threshold of 0.1. It can be concluded that the four proposed paths have good significance in the model.

TABLE 5
PATH COEFFICIENT VALUE

	Customer Satisfaction
Content	0,288
Information Quality	0,219
Service Interaction Quality	0,297
Usability Quality	0,166

3.2.2 Coefficient of Determination

In this test, measurement standards of about 0.670 (strong), about 0.333 (moderate), and 0.190 or below (weak) are used. Table 4.8 shows that the R2 obtained from the calculation results is strong.

TABLE 6
COEFFICIENT OF DETERMINATION VALUE

	R Square	R Square Adjusted
Customer Satisfaction	0,716	0,704

3.2.3 T-test

The test results in table 7 show that the value of the t-test results for each hypothesis is accepted because it has exceeded the threshold value of 1.96.

TABLE 7
T-TEST VALUE

	T Statistics (|O/STDEV|)
Content → Customer Satisfaction	2,611
Information Quality → Customer Satisfaction	2,063
Service Interaction Quality → Customer Satisfaction	2,537
Usability Quality → Customer Satisfaction	2,031

3.2.4 Effect Size

The results of the effect size test that were carried out resulted in the f2 value which was calculated using a predetermined formula.

TABLE 8
EFFECT SIZE VALUE

	Customer Satisfaction
Content	0,111
Information Quality	0,030
Service Interaction Quality	0,151
Usability Quality	0,058

3.2.5 Predictive Relevance

This test of predictive relevance uses the blindfolding method to provide evidence of the linkage of certain variables. Table 9 shows that all variables have predictive relationships.

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3.2.6 Relative Impact Test

This relative impact test uses the blindfolding method to measure the relative effect of a variable with other variables. Table 9 shows that all variables have a large effect.

TABLE 9
ANALYSIS RESULT

No.	Jalur	B	t-test	R^2	R^2-in	R^2-ex	$\sum f^2$	Q^2	Q^2-in	Q^2-ex	$\sum q^2$
H1	USQ - CUS	0,288	2,611	0,716	0,716	0,704	0,4225	0,523	0,523	0,514	0,019
H2	INQ - CUS	0,219	2,063	0,716	0,716	0,704	0,4225	0,523	0,523	0,514	0,019
H3	SIQ - CUS	0,297	2,537	0,716	0,716	0,704	0,4225	0,523	0,523	0,514	0,019
H4	CON - CUS	0,166	2,031	0,716	0,716	0,704	0,4225	0,523	0,523	0,514	0,019

β	t-test	R^2	f^2	Q^2	q^2
Sign	Diterima	Kuat	k	Predictive Relevance	k
Sign	Diterima	Kuat	k	Predictive Relevance	k
Sign	Diterima	Kuat	k	Predictive Relevance	k
Sign	Diterima	Kuat	k	Predictive Relevance	k

Based on the results of the 6 (six) stages of analysis that have been carried out, namely path coefficient, coefficient of determination, t-test, effect size, predictive relevance,
and relative impact, the following discussion will contain the interpretation and discussion of researchers.

Q2.1 Does Usability Quality (USQ) have a significant effect on Customer Satisfaction (CUS)?

The results of the t-test on the structural model analysis showed that the hypothesis was accepted. USQ has an influence on CUS. The USQ CUS path has a significant effect based on the value of , whereas based on the calculation of f2 and q2, the resulting effect is small.

This is in accordance with the initial assumption proposed based on the previous research model (Rezkiani, Suprapto, & Rachmadi, 2018) which states that the USQ variable has a positive effect on CUS. Based on statistical calculations using individual test variables, USQ has a significant and positive effect on the website quality variable (overall impression) (Kadar, Napitupulu, & Jati, 2017).

Q2.2 Does Information Quality (INQ) have a significant effect on Customer Satisfaction (CUS)?

Based on the results of the t-test on the analysis of the structural model,
hypothesis is accepted. INQ has an influence on CUS. The INQ CUS path has a significant influence based on the value of, on the contrary if it is sourced from the calculation of f2 and q2 the resulting impact is small.

The INQ variable is stated to greatly influence user satisfaction (Hendarti, Christian, Permatasari, Maryani, & Nindito, 2017). This is supported by other research that INQ has a positive and significant impact and distribution of donations to user satisfaction is based on the level of correlation (Christian, Jaya, & Rulyna, 2017).

Q2.3 Does Service Interaction Quality (SIQ) have a significant effect on Customer Satisfaction (CUS)?

Based Based on the results of the t-test on structural model analysis, the hypothesis is accepted. SIQ has an influence on CUS. SIQ CUS has a significant influence based on the value, on the other hand, based on the calculation of f2 and q2 the resulting impact is small.

SIQ has a positive influence partially (Nugroho & Sari, 2016), in line with the statement that SIQ has a significant influence (Sanjaya, 2012).

Q2.4 Does Content (CON) have a significant effect on Customer Satisfaction (CUS)?

Based on the results of the t-test on the structural model analysis, the hypothesis is accepted. SIQ has an influence on CUS. SIQ CUS has a significant effect based on the value, on the contrary based on the calculation of f2 and q2 the resulting impact is small.

This is in line with previous research that has been tried. The content that contains data, data details, and the suitability of the data with the needs of the end user has a significant influence on the level of user

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satisfaction (Prasetyo, Yulia, & Felisia, 2017). Reinforced again, CON also has a significant influence on user satisfaction of data systems, which in this case are web-based (Rosalina, 2017).

4. Conclusion

Based on the results of the study, the following are important conclusions from the research that has been carried out.

a. All hypotheses that affect Customer Satisfaction are declared accepted based on the results of path coefficient (β) and t-test tests. Customer Satisfaction, which is determined by the quality of the website, relates to providing information with high detail and always up-to-date.
b. There are 4 (four) research hypotheses accepted, with the most influencing relationships sequentially, namely the relationship between Service Interaction Quality and Customer Satisfaction (SIQ → CUS), Content and Customer Satisfaction (CON → CUS), the relationship between Information Quality and Customer Satisfaction (USQ → CUS), and the relationship between Usability Quality and Customer Satisfaction (INQ → CUS).
c. In general, based on the choices in the questionnaire, users are overall satisfied when using the IAKN Tarutung E-learning website reaching 64%. Users feel that E-learning IAKN Tarutung is quite effective and efficient and feels that E-learning IAKN Tarutung has met the needs of students. And 56% of respondents stated that the appearance of this website is not attractive to users where this is in line with the test results on the Usability Quality variable.
d. The most important factor in the formation of user satisfaction with the quality of the IAKN Tarutung E-learning website is Service Interaction Quality (SIQ) with a satisfaction level of 29.7%, followed by Content (CON) with a satisfaction level of 28.8%, then Information Quality (INQ).) with a satisfaction level of 21.9%, and Usability Quality (USQ) with a satisfaction level of 16.6%.
e. Simultaneously, the variables forming user satisfaction in the proposed model (Usability Quality, Information Quality, Service Interaction Quality, and Content) have an effect of 71.6% on user satisfaction.

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