



# Analysis of e-learning user satisfaction at XYZ University in the new normal era of the covid-19 pandemic

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## ARTICLE INFO

## ABSTRACT

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In 2020 Indonesia implemented a new normal policy as a form of adaptation to the Covid-19 pandemic. In the new normal period, XYZ university uses e-learning as one of the distance learning media to deliver learning materials to students. This study aims to analyze the factors that affect student satisfaction in using e-learning. The End-User Computing Satisfaction (EUCS) model is used as a research model. The data was taken through the dissemination of questionnaires using google from 249 respondents consisting of students from three study programs. From the data obtained, analysis was carried out using the Structural Equation Model (SEM) with SmartPLS software. The results showed that the Content, Ease of Use, and Timeliness variables had a positive and significant effect on User Satisfaction while the Accuracy and Format variables did not have a significant effect on User Satisfaction.

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## 1. INTRODUCTION

The COVID-19 pandemic in Indonesia occurred in 2020. The spread of the COVID-19 virus that occurred in various cities that continued to penetrate several islands in Indonesia made the Indonesian government take action and designate March 14, 2020, as a national disaster (Mustar 2021). The government imposed various preventive measures, such as social restrictions which caused many companies and sectors of the economy to experience difficulties. These preventive measures are not only carried out in the economic sector but also in the education sector. Distance education is an alternative for schools and universities to survive during the pandemic.

Entering the end of 2020, Indonesia began to implement the concept of a "new normal". The new normal focuses on adapting people and businesses to continue daily activities by observing strict health protocols, such as maintaining social distancing, wearing masks, and washing hands frequently (Winarso et al. 2020). In the new normal era, the implementation of distance education is still being carried out by several universities, one of which is XYZ university. University XYZ uses e-learning as one of the

distance learning media to deliver learning materials to students online or via the internet.

E-learning is an organized educational process that bridges the separation between students and educators and is mediated by the use of technology, and minimal face-to-face meetings (Sugandini et al. 2021). E-learning as one of the distance learning methods can be used to adapt to learning needs that support conventional learning. E-learning has become a necessity that supports the implementation of learning, through e-learning learning can be done anywhere (Putera and Candiasa 2021). One of the e-learning platforms used by XYZ university is google classroom learning management system (LMS).

Google Classroom is a platform developed by Google and provided free of charge to help students learn (Sari and Nurmiati 2021). Google Classroom can be accessed for free for academic and organizational purposes by using a google account (Niqotaini 2021). Google Classroom has features such as exam tools, assignments, and reports that can be accessed multiplatform using both desktop and mobile devices (Bih Ni 2020). Google Classroom also allows teachers to coordinate with students efficiently, such as by sending announcements and assignments and monitoring learning progress.

In conducting distance learning, the quality of service will certainly create user satisfaction with a system. Quality of service encourages customers to forge strong relationships with a system (Eliza 2015). In this case, the quality and convenience of the system are closely related to user satisfaction. (Setyo.B 2015) defines User satisfaction as an overall assessment of the user experience using information systems. (Bakhit Jaafreh 2017) defines user satisfaction as the recipient's response to the use of information systems. If the User is satisfied, it means that the user feels the benefits of the system used.

The level of user satisfaction with e-learning is important in assessing the success rate of a system. One method that can be used to measure the level of user satisfaction is End User Computing Satisfaction (EUCS). EUCS is used to assess the level of satisfaction of information system users based on their experience in using the system (Putera and Candiasa 2021). Research conducted by (Padalia and Natsir 2022), (Novializa, Rini, and Irsyadunas 2022), and (Abdillah 2019) used the EUCS model to measure the level of student satisfaction in using e-learning. (Bakar et al. 2020) conducted a study using the EUCS model to measure user satisfaction with the Examination Invigilation System, while (Pauluzzo and Geretto 2018) used the EUCS model to measure user satisfaction with online banking.

The EUCS instrument is designed to be generally applicable to a variety of respondent positions. EUCS focuses on the satisfaction of application use with the interaction between users and information systems (Doll & Torkzadeh, 1988). Based on previous research related to user satisfaction with e-learning, there has been no research conducted at XYZ university, which geographically XYZ university is located in the province of West Kalimantan. XYZ University has been implementing e-learning since the start of the covid-19 pandemic. In its application, there has never been an evaluation of the level of user satisfaction, so it is not known whether the use of e-learning has an impact on improving the quality and quality of education. Therefore, it is necessary to analyze the factors that affect the level of user satisfaction with the e-learning system at XYZ University in the new normal era of the Covid-19 pandemic.

## 2. RESEARCH METHOD

### 2.1 Research Approach

The research was structured using a quantitative approach method. A quantitative approach is an approach that is carried out systematically and empirically through statistics, mathematics, and numerical data processing (Basias and Pollalis

2018). The research was conducted through several stages, the first of which was to conduct a literature study related to the factors that affect the level of user satisfaction with an E-Learning system at the university. Second Create Models, Variables, and Hypotheses based on literature studies and identification of problems. The third makes the analysis and processing of the data and finally make the conclusion

## 2.2 Research model

The research model used adopts the End User Computing Satisfaction (EUCS) established by (Doll & Torkzadeh, 1988) The research model can be seen in the following figure:

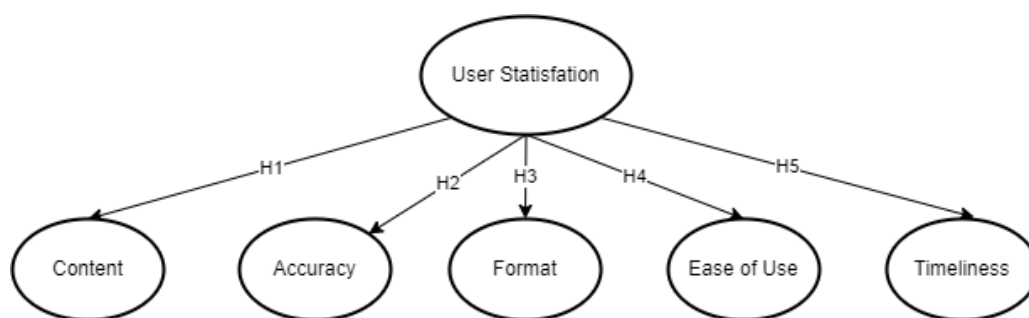


Figure 1. Research Model

By Figure 1, the research model to be used in the study has 6 variables, namely Content, Accuracy, Format, Ease of Use, Timeliness as an independent variable, and User Satisfaction as a dependent variable. Based on the following research model the proposed hypothesis: H1: Content has a significant positive effect on User Satisfaction, H2: Accuracy has a significant positive effect on User Satisfaction, H3: Format has a significant positive effect on User Satisfaction, H4: Ease of Use has a significant positive effect on User Satisfaction, H5: Timeliness has a significant positive effect on User Satisfaction

## 2.3 Data collection

The data collection technique used in the study was to use a questionnaire. The questionnaire is a list of questions given to respondents to give their opinions (Prawiyogi et al. 2021). The source of data is primary, which means that the data is obtained directly from related parties, namely students who use the e-learning information system at XYZ University who will later become respondents through the distribution of questionnaires.

From the questions shared through the questionnaire, the answers will be measured using a Likert scale. The Likert scale describes respondents' attitudes and opinions towards a phenomenon (Chakrabartty and Nath Chakrabartty 2019). The Likert scale consists of Strongly Disagree (STS), Disagree (TS), Neutral (N), Agree (S), and Strongly Agree (SS) with a score of 1-5.

For this research to be carried out according to the expected time and on target, the use of simple random sampling techniques will be used to obtain respondent data that is representative of all students at XYZ University. Simple random sampling is a sampling technique for populations in that each member of the population has the same opportunity (Arieska and Herdiani 2018).

The population in this study is xyz university students from the faculty of teacher training and education (FKIP) which consists of three study programs, namely mathematics education study programs, English language education and physical

education, health, and recreation with a population of 660 people. The size of the sample to be used in the study was determined based on the large population of XYZ University.

The Slovin formula is used to determine the sample size of a population in which it has been known in number (Gustiani Pakendek 2018). Based on the calculation of the Slovin formula, the number of samples to be used in this study was 249 people. The collected data will be analyzed using the Structural Equation Model (SEM) and Smart PLS software as a tool for processing the data that has been collected through questionnaires.

Structural Equation Modeling (SEM) is a statistical method that aims to test hypotheses using structural analysis (Junaidi 2021). Structural Equation Modeling (SEM) is a development of path analysis and multiple regression which are both forms of the multivariate analysis model.

### 3. RESULTS AND DISCUSSIONS

In the results and discussions, the results obtained from the distribution of the survey will be explained in the form of a questionnaire that is distributed related to the satisfaction of e-learning users at XYZ University. Questionnaires have been distributed using Google Forms to student e-learning users. The data is collected and then processed using SmartPLS software. Based on the distribution of questionnaires that have been carried out to respondents, questionnaires were filled out by respondents with a total of 249 questionnaires and obtained respondent data as follows:

#### 3.1 Respondent Profile

##### a. Respondent's Gender

There were 42.2% of men and 57.8% of women out of a total of 249 respondents. Most of the respondents in this study were female. This can be seen in the following image:

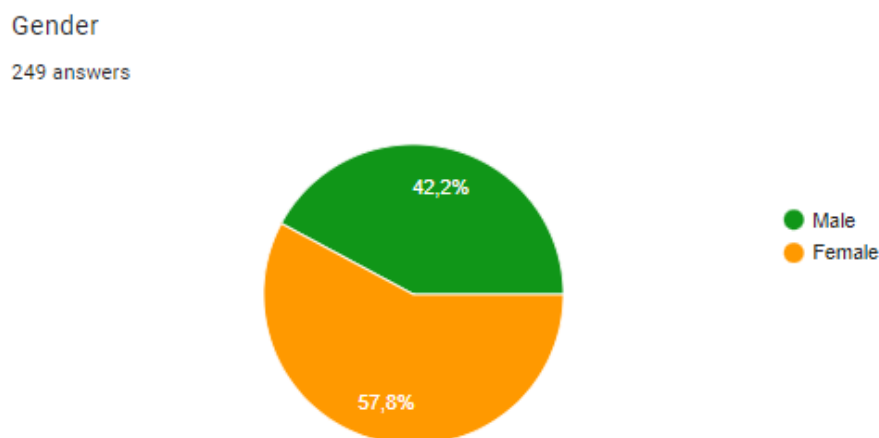


Figure 2 Respondent's Gender

##### b. Respondent Study Program

There were 28.9% of English language education study programs (PBI), 37.8% of health and recreational physical education study programs (PJKR), and 33.3% of mathematics education study programs (PMAT) from a total of 249 respondents. Most of

the respondents in this study were from health and recreational physical education study programs (PJKR). This can be seen in the following image:

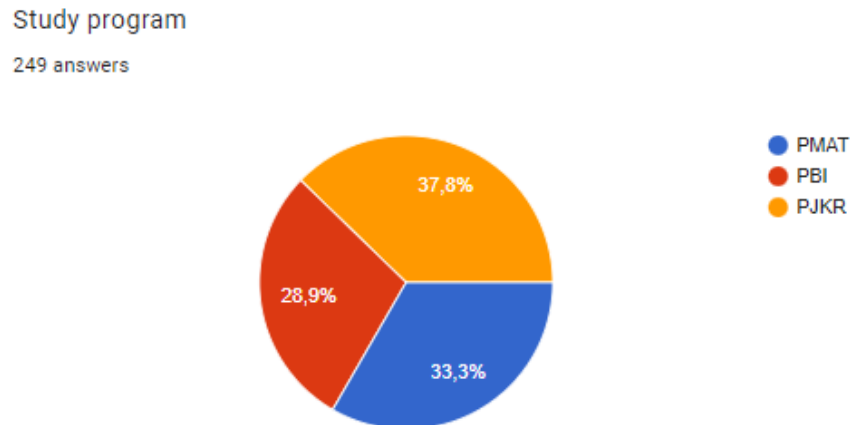


Figure 3 Respondent Study Program

#### c. Preliminary Research Model

In this research, a research model is described as a path diagram construction, the following is a research path diagram model depicted using SmartPLS 4:

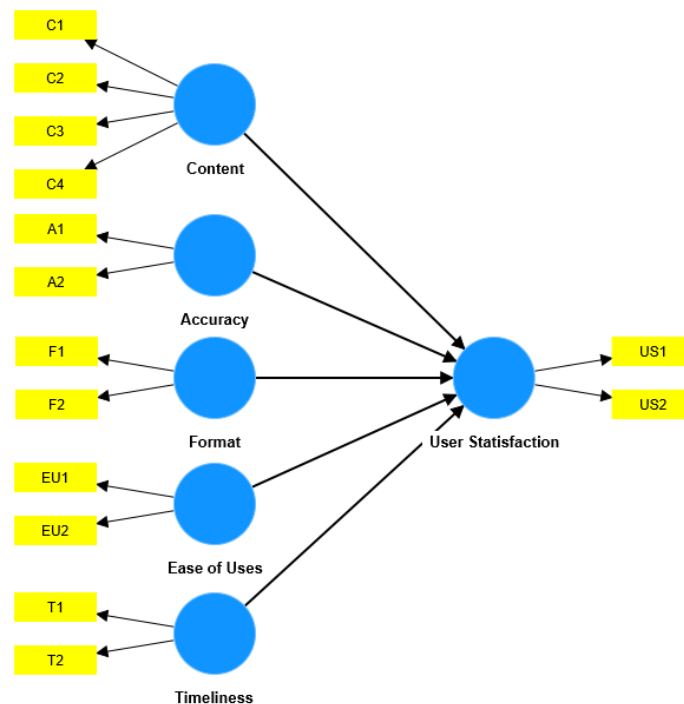


Figure 4 Path Diagram

In testing this measurement model, three activities were carried out, namely validity test, reliability test, and linear regression test. This test will be carried out using SmartPLS 4

#### d. Validity Test Results

The validity test is used to test whether the metrics used in the survey questionnaire are valid or not. The calculations in this test are carried out to find out the correlation between indicator variables. To calculate the convergent validity test, the indicator sizes used are the loading factor and Average Variance Extracted (AVE). The test results using smartPLS can be seen in the following figure:

Table 1 Valididtas Test Results

Variable	Indicators	Loading Factor	AVE	Information
Content	C1	0.878	0.786	Valid
	C2	0.868		Valid
	C3	0.906		Valid
	C4	0.894		Valid
Accuracy	A1	0.946	0.893	Valid
	A2	0.943		Valid
Format	F1	0.909	0.839	Valid
	F2	0.923		Valid
Ease of Use	EU1	0.937	0.882	Valid
	EU2	0.941		Valid
Timeliness	T1	0.939	0.882	Valid
	T2	0.938		Valid
User Satisfaction	US1	0.927	0.859	Valid
	US2	0.927		Valid

Table 1 shows that each variable has an AVE value of more than 0.5 which shows that all variables represent variations greater than 50% in each indicator. Then the results of measuring the loading factor shown in the figure have a value of more than 0.7 on each indicator. Based on the AVE value and loading factor, it can be concluded that all indicators in the variable have met convergent validity.

#### 3.4 Reliability Test Results

In the reliability test, the Alpha Cronbach measurement technique was used on instruments using smartPLS. The test results using smartPLS can be seen in the following figure:

Table 2 Reliability Test Results

Variable	Alpha Cronbach	Information
Content	0.909	Reliable
Accuracy	0.880	Reliable
Format	0.809	Reliable
Ease of Use	0.867	Reliable
Timeliness	0.866	Reliable
User Satisfaction	0.836	Reliable

Table 2 shows that each variable has an Alpha Cronbach value of more than 0.7 so it can be said that all variables used in the instrument are real.

#### 3.5 Linear Regression Test Results

In the hypothesis test, a linear regression test was carried out to determine the correlation between two or more variables that have a relationship using smartPLS. The test results using smartPLS can be seen in the following figure:

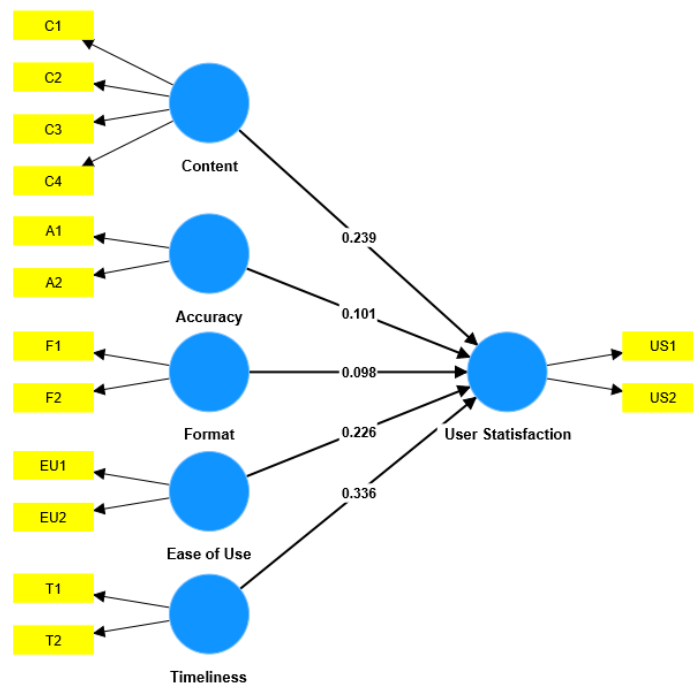


Figure 5 Linear Regression Diagram

Based on the figure, the linear regression equation is as follows:

$$US = 0.239 C + 0.101 A + 0.098 F + 0.226 EU + 0.336 T$$

In the regression equation above, it is known that the research instrument that contributes the most and affects the satisfaction of e-learning users at XYZ universities is the Timeliness factor, and then the Content factor, the Ease of Use factor, the Accuracy factor, and the Format factor. With the results shown in the linear equation, it can be judged that the influence of Timeliness, namely the speed of the system in processing inputs and producing good outputs, will have a positive impact and encourage users to be satisfied with using the system.

### 3.6 Hypothesis Test Results

In this study to show a significant relationship between variables, it was determined by comparing the calculated p-value (P Statistics) with the table p-value with a significant level of 5%. Based on a significant rate of 5% then the P table value is 0.05 so that if the value is <0.05 then the hypothesis is accepted and if the value is >0.05 then the hypothesis is rejected. The following is a table of results from Path Coefficient using Smart PLS Bootstrapping Resampling:

Table 3 Path Coefficient

No	Variable Independent	Variable Dependent	P-Value	Information
1	Content (C)	User Satisfaction (US)	0.002	Accepted
2	Accuracy (A)	User Satisfaction (US)	0.109	Rejected
3	Format (F)	User Satisfaction (US)	0.168	Rejected
4	Ease of Use (EU)	User Satisfaction (US)	0.000	Accepted
5	Timeliness (T)	User Satisfaction (US)	0.000	Accepted

Hypothesis 1 (H1), it is stated that Content has a positive effect on User Satisfaction. Based on Table 4.3, the P value of the Content variable is 0.002 and less than 0.05, so the H1 Hypothesis is acceptable where Content has a significant positive

effect on User Satisfaction in e-learning. The results of this test are in line with the hypothesis that has been made where Content has a significant positive effect on User Satisfaction.

Hypothesis 2 (H2), it is stated that Accuracy has a significant positive effect on User Satisfaction. Based on Table 4.3, the P value of the variable Accuracy is 0.109 and greater than 0.05, so the conclusion of the H2 Hypothesis is rejected. The results of this test are different from the hypothesis that has been made where Accuracy has a significant positive effect on User Satisfaction.

Hypothesis 3 (H3), it is stated that Format has a positive effect on User Satisfaction. Based on Table 4.3, the P value of the Format variable is 0.168 and greater than 0.05, so the conclusion of the H3 Hypothesis is rejected. The results of this test are different from the hypothesis that has been made where Format has a significant positive effect on User Satisfaction

Hypothesis 4 (H4), it is stated that Ease of Use has a significant positive effect on User Satisfaction. Based on Table 4.3, the P value of the Ease of Use variable is 0.000 and less than 0.05, so the H4 Hypothesis is acceptable where the Ease of Use positively affects User Satisfaction with e-learning. The results of this test are in line with the hypothesis that has been made where Ease of Use has a significant positive effect on User Satisfaction

Hypothesis 5 (H5), it is stated that Timeliness has a significant positive effect on User Satisfaction. Based on Table 4.3, the P value of the Timeliness variable is 0.000 and less than 0.05, so the H5 Hypothesis is acceptable where Timeliness positively affects User Satisfaction in e-learning. The results of this test are in line with the hypothesis that has been made where Timeliness has a significant positive effect on User Satisfaction

#### 4. CONCLUSION

This research was conducted to find out the factors that affect user satisfaction with e-learning learning at XYZ university which was carried out during the new normal period of the Covid-19 pandemic. In conducting the analysis, a EUCS model is used that has been adjusted to the identification of the previous problem. Through this research, it is known that: Content has a significant positive influence on e-learning user satisfaction. Accuracy does not have a significant effect on user satisfaction. The format does not have a significant influence on user satisfaction. Ease of Use has a significant influence on user satisfaction. Timeliness has a significant influence on user satisfaction.

This research refers to the EUCS model which is limited to the variables contained in the EUCS model so other aspects and factors that can affect user satisfaction with an information system are not included in this study. for future researchers regarding user satisfaction with e-learning, it is necessary to look at other factors or add variables by taking into account user demographic aspects that can affect the level of satisfaction with e-learning.

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