



Student Perception Towards Application Performance for Online Learning

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This study analyzes students' perceptions of the applications used in e-learning. The study is based on the pandemic situation which caused major changes in learning. During the pandemic, almost all classes are conducted online. One of the online meeting media that is widely used is the Zoom application. The study will analyze students' perceptions of the performance of applications used for online learning. The analysis will be based on the Technology Acceptance Model (TAM). TAM highlights that acceptance of the information system is influenced by perceived usefulness (POU) and perceived ease of use (PEU). This study will adopt the independent variables, namely POU and PEU and analyze their influence on the performance of online learning applications. The study was conducted in Yogyakarta. Data was obtained by distributing questionnaires to students who were taking online classes. Data analysis used multiple regression. The results of the analysis show that PEU and POU affect the performance of online learning applications.

Keywords: Online Learning, Online Learning Application, Technology Acceptance Model

INTRODUCTION

The order of activities in all areas has been altered by the Covid-19 pandemic. One area that has seen significant transformation as a result of the pandemic is higher education. Once-face-to-face classes in the classroom were switched to online classes. Utilizing online media in the teaching and learning process is one of the effects of taking online classes. The assignment, assessment, and graduation in this example are all conducted online as a result of online learning.

Students are not all equally capable of following online classes. Online classes are simple to take for students who live in places with easy access to the internet. It is in contrast to the students who are not connected to the internet. This distinction will affect how the pupils judge the effectiveness of the employed application.

This study analyzes students' perceptions of application performance in online learning that they participate in. The discussion uses the Technology Acceptance Model (TAM)

framework. Technology Acceptance Model (TAM) is an information technology system acceptance model that will be used by system users. The Technology Acceptance Model (TAM) was developed by (Davis, 1989) which was adopted from Theory of Reasoned Act (TRA), namely the theory of reasoned action developed by Fishben (1975) and Technology Acceptance Model developed by Davis (1979).

Students' perceptions of the performance of online learning applications can be predicted with perception of usefulness and perceived ease of use. Sanjaya's mentions that the perception of usefulness affects students in using the internet (Sanjaya, 2017). Meanwhile, Kartika (2009) found that self-efficacy was positively related to perceived ease of use. Muntianah emphasizes that the perceived ease of use affects the perception of usefulness (Muntianah, Tutik S. Astuti, 2012). This means that students think that if the information system is easy to use, then the information system has benefits. This study uses the independent variable perceived usefulness (POU) and perceived ease of use (PEU). The two independent variables are associated with student perceptions of the performance of online learning applications. Information system performance is related to system user satisfaction. System user satisfaction shows the user's perception of the information system used. This study uses user perceptions of information system performance. User perceptions of information system performance are influenced by user perceptions of the usefulness and convenience of information systems. The fundamental assumption of this study is that if a user thinks an information system is simple to use and helpful, they will also think it performs well.

Students who are enrolled in online courses use programs chosen by the campus or the lecturer. Meeting room application is the only one utilized in online class. Students as application users are parties who have a neutral perception of learning application and performance of online learning application. This study will use the TAM framework to analyze the effect of perceived usefulness (POU) and perceived ease of use (PEU) on the use and performance of online learning applications.

LITERATURE REVIEW

Theory of Reasoned Action (TRA) was formulated by Ajzen & Fishbein (1980 in Purwoko et al., 2022). This theory is the result of their research in 1980. According to this theory, behavior beliefs and normative beliefs are what motivate people to act in certain ways. These factors then encourage someone to have an outcome evaluation and motivation to comply, so that these two things will encourage a person to behave (Attitude) and Personal Norms (Subjective Norms). The existence of Attitude and Subjective Norms will affect a person's attention/focus in behavior intention. Furthermore, the Behavior Intention will affect a person's behavior (Purwoko et al., 2022).

Based on TRA, Davis (1989 in Kristianto et al., 2022) developed TAM to examine the determinants of the use of information technology by users. TAM adds two main constructs to the TRA model. These two main constructs are perceptions of perceived usefulness and perceptions of perceived ease of use. (Jogiyanto, 2007 dalam Purwoko et al., 2022) states that TAM argues that individual acceptance of information technology is determined by these two constructs (Purwoko et al., 2022).

Several researchers have adopted TAM to analyze the acceptance of information technology or specific applications. Sanjaya (2017) conducted a study on the Effect of Sense of Benefit and Ease on Students' Behavioral Intention in Using the Internet. The results of his research show that perceived usefulness can affect a person's use of the internet, while perceived ease of use cannot affect someone's use of the internet (Sanjaya, 2017).

Moreover, Kartika carried out a study on the Analysis of the Acceptance Process for the iCons Information System Using the Technology Acceptance Model for Employees of PT. Bank Negara Indonesia (Persero) Tbk. in Semarang. The results of the study show that Self-

Efficacy has a positive relationship with perceived usefulness in the use of the iCons information system. This indicates that the level of employees' ability to make decisions has an impact on the perceived benefits of using iCons (Kartika, 2009).

Students' perceptions of the performance of online learning applications can be predicted with perceived usefulness and perceived ease of use. Sanjaya (2017) states that the perception of usefulness affects students in using the internet (Sanjaya, 2017). Meanwhile, Kartika finds that self-efficacy was positively related to perceived ease of use (Kartika, 2009). Muntianah highlights the perception of convenience affects the perception of usefulness. This indicates that students believe an information system is advantageous if it is simple to use. This study uses the independent variable of perceived usefulness (POU) and perceived ease of use (PEU). The two independent variables are associated with student perceptions of the performance of online learning applications. Information system performance is related to system user satisfaction. System user satisfaction shows the user's perception of the information system used. User perceptions of information system performance are influenced by user perceptions of the usefulness and convenience of information systems. The fundamental assumption of this study is that if a user thinks an information system is simple to use and helpful, they will also think it performs well (Muntianah, Tutik S. Astuti, 2012).

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Furthermore, Mega conducted a study on the use of TAM for village financial system analysis in Sleman district, show that perceived usefulness and perceived ease of use affect interest in using SISKEUDES. The use of intention affects the use of SISKEUDES. In addition, attitudes also affect the use of SISKEUDES. This shows that TAM can be applied to analyze SISKEUDES (Andriane, 2020).

In line with the previous research, Irawati emphasizes the use of TAM to analyze the use of the Alisa application for Telkom Surakarta employees, the results show that TAM can be used as a basis for analysis for the use of the Alisa application by Telkom Surakarta employees. POU and PEU affect the performance of the Alisa application (Irawati et al., 2020).

The following logic flow and hypothesis are based on some of the research findings mentioned above: students use online learning applications based on the provisions of the lecturer or campus. Students use certain applications with different levels of difficulty and sense of benefit. Perceptions of ease of use (PEU) and perceptions of usefulness (POU) are felt by students in online learning. Based on this perception, students will be able to

determine the use of applications and the performance of applications used during online learning.

The proposed hypothesis are as follows:

H1: Perceived usefulness (POU) affects the use of online learning applications.

H2: Perceived Ease of Use affects the use of online learning applications.

H3: Perceived usefulness has a direct and indirect effect on user perceptions of the performance of online learning applications.

H4: Perceived Ease of Use has a direct and indirect effect on user perceptions of the performance of online learning applications

Research Framework

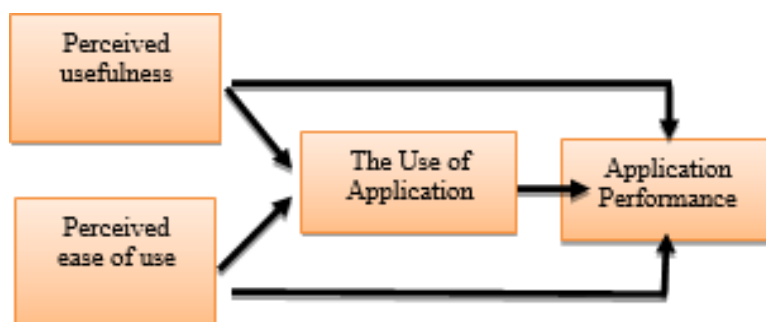


Figure 1. Conceptual Framework

RESEARCH

The research was conducted by survey method. The survey was conducted by distributing questionnaires to universities in the Special Region of Yogyakarta. The distribution was carried out in 6 universities whose students took online lectures. There were 400 questionnaires distributed. Dissemination of questionnaires via Google form. The questionnaire was expected to reach all students from all universities, but after the deadline for returning the questionnaire, only students from 6 six colleges answered the questionnaire.

There are 334 questionnaires that can be processed. The first step in processing the data is to test the quality of the data. To tes the quality of the data it is used the validity test and reliability test. Spearman correlation is used to measure the validity. The results of the validity test show that the correlation coefficient between the question item values and the total value is above 0.5, for all variables. Reliability test is carried out by using Cronbach alpha. The results of the reliability test showed that the Cronbach alpha value was above 0.6 for all variables.

Hypothesis testing using mediating regression analysis, namely gradual regression to determinethe effect of POU and PEU on the use and performance of information systems.

The stages of hypothesis testing are as follows:

Stage 1 examines the effect of POU and PEU on the use of online learning applications.

The equation is presented below:

$X3 = a + b1X1 + b2X2$

X3 = Use of online learning applications

X2 = Perceived usefulness (POU)

X3 = Perceived ease of use

(PEU)a = constant

b1, b2 = regression coefficient Equation 1 will show the effect of POU and PEU on the use of online learning applications

Stage 2 examines the effect of using online learning applications on user perceptions of application performance.

$$Y = a + b_3X_3$$

Equation 2 will show the effect of using online learning applications on the performance of online learning applications.

Stage 3 examines the effect of POU and PEU on the performance of online learning applications.

$$Y = a + b_4X_1 + b_5X_2$$

Based on equation 3, it can be inferred that the influence of POU and PEU on the performance of online learning applications.

Hypotheses 3 and 4 were analyzed based on a comparison of the correlation coefficient values of equations 2 and 3. According to Gozali (2017) if the correlation coefficient of the equation of the mediating variable - the dependent variable (equation 2) is greater than the correlation coefficient of the independent variable - the dependent variable (equation 3) then there is an influence indirect relationship between POU and PEU on the performance of online learning applications. On the otherhand, if the correlation coefficient in equation 2 is smaller than the correlation coefficient in equation 3, there is a direct effect of the independent variable on the dependent variable.

RESULT AND DISCUSSION

The results of data processing using mediating regression analysis are presented in the following tables:

Equation 1 (Stage 1)

Table 1 Result of Regression 1

Note	Regression Coefficient	tValue	sig
Contant	3.025	11.326	0,000
POU	.079	.963	0.336
PEU	.150	1.757	0,080
R ²	.036		
F Value	6.174	Sig	0,002

Dependent Variable: the use of application

The equation in table 1 shows that the t value of each independent variable having a sig. above 0.05. Sig above 0.05 means that individually POU and PEU do not affect the use of online learning applications. This finding disapproves of the proposed Hypothesis 1. The F value is 6.174 sig 0.002, which means that it simultaneously affects the use of online learning applications. The value of R² is 0.036, which means that the independent variables (POU and PEU) are able to explain changes in the dependent variable (the use of online learning applications is 3%).

Equation 2 (Stage 2)

Table 2. Result of Regression 2

Note	Regression Coefficient	tValue	sig
Contant	3.672	.034	.000
The Use of Application	.034	.693	.489
R ²	.001		
F Value	.480	Sig	.489b

Dependent Variable: Application Performance

The equation in table 2 shows that the t value for application use is 0.693 sig. 0.489.

The significance value is above 0.05, meaning that the use of online learning applications does not affect user perceptions of the performance of online learning applications. This finding disapproves the proposed Hypothesis 2. F value 0.480 sig 0.489 indicates that the use of online learning applications does not affect the user's perception of performance. R2 value of 0.001, this value indicates that the independent variable is able to explain the variation in the independent variable of 0.1%.

Equation 3 (Stage 3)

Table 3. Result of Regression 3

Note	Regression Coefficient	tValue	sig
Contant	1.076	5.821	.000
POU	.160	2.709	.007
PEU	.524	9.228	.000
R ²	.426		
F Value	122.312	Sig .000	

Dependent Variable: Perception of the performance

Table 3 shows the t value of each independent variable having a sig under 0.05. This means that individually POU and PEU affect user perceptions of the performance of online learning applications. These results accept hypotheses 3 and 4 which state that POU and PEU are directly related to user perceptions of the performance of online learning applications.

The following figure shows the outcomes of the three equations as they are given in the research framework:

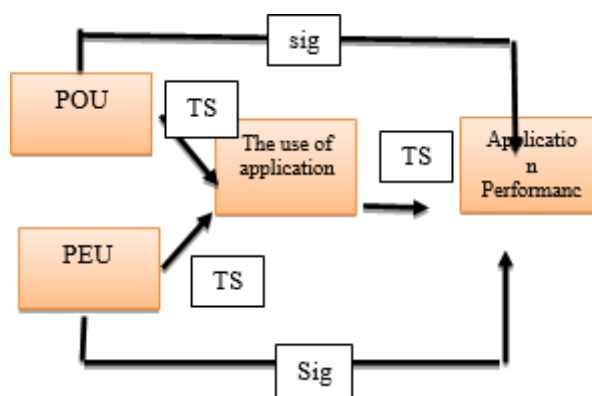


Figure 2 Data Processing Result

Description: TS = Not Significant, Sig. = significant.

Based on the results of data processing and the research framework, it can be explained as follows:

The effect of POU and PEU on the use of online learning applications is not significant. It means that POU and PEU do not affect the use of online learning applications. Logically, this can be justified. The participants in this study were students who were enrolled in online courses but were restricted in their ability to select the software they would use. Students use educational software in accordance with that which is offered by professors and the school even though students have a perception of usefulness (a lot or little benefit) the application is still used due to the mandatory. The results of this study are in line with the research of Purwoko etc (2022) (Purwoko et al., 2022), but oppose to the research conducted by (Sanjaya, 2017) and (Muntianah, Tutik S. Astuti, 2012).

The use of online learning applications on user perceptions of the performance of online

learning applications is not significant. This means that the use of online learning applications does not affect the user's perception of the performance of online learning applications. The reasoning for this conclusion is that since using the program is required, its amount or frequency of use will not have an impact on how the user perceives its performance. The findings of this study are in opposition to those of (Sanjaya, 2017), (Wijayanti et al., 2022), and (Kartika, 2009). However, this study backs with Mega's research's findings (Andriane, 2020) as well as those of (Irawati et al., 2020).

The direct effect of POU and PEU on user perceptions on the performance of online learning applications shows significant results. It means that POU and PEU have a direct effect on user perceptions on the performance of online learning applications. The online learning applications used by respondents are the Google meeting application (20%) and the Zoom meeting application (80%). This result specifically states that the user has an assumption that the two applications are easy to use and have benefits. Under these conditions, the user assumes that the performance of the online learning application is said to be good if the learning application is useful and easy to use. The results of this study are in line with research conducted by (Irawati et al., 2020) and (Andriane, 2020).

According to the discussion of the study's overall findings, students have a perspective of an application's performance if it is helpful to the user and simple to use. This study employs student respondents to show that it is recommended for universities hosting online lectures to use or give applications that are simple for students to use and offer advantages.

CONCLUSION

The study's findings indicate that perceived utility and perceived ease of use have little impact on how often people utilize online learning programs. The user's opinion of an application's performance is unaffected by the use of online learning programs. It has been demonstrated that POU and PEU have an impact on how users view the effectiveness of online learning applications.

It is advised that universities that host online learning employ tools that benefit students and are simple for them to use.

It is anticipated that the following researcher will collect respondents from a wider range of online learning programs because two different types of applications are used by respondents in this study. The next researcher can concentrate on a certain application that is utilized by more respondents.

The research still has drawback which is only included participants from six institutions and was restricted to one specific area, Yogyakarta. Therefore, the results of the study cannot, of course, be generalized in this way.

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