

Factors Related to the Continuance Intention Using E-Learning Based on Expectation Confirmation Model (ECM) for Postgraduate Students

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ABSTRACT

E-learning is a learning method based on information and communication technology (ICT). This learning method is a mandatory alternative during the Covid-19 pandemic. Since March 11, 2020 was declared a pandemic by WHO, the implementation of learning activities no longer takes place face-to-face. Online learning using e-learning brings a separate assessment to each student. This study aims to determine the factors associated with the continuance intention using e-learning. The population in this study are postgraduate students. The reason for choosing the sample because at this level some students have worked. Sample selection based on a simple random sampling method. Is e-learning an effective choice of learning method because it can be done remotely at their busy time. The study was conducted using the Expectation Confirmation Model approach (Bhattacharjee, 2001) using the constructs of perceived usefulness (PU), confirmation (Cf) and satisfaction (Sf) on continuance intention (CI). The data were collected through a questionnaire use google form. The data is analyzed using Moderated Regression Analysis and performed with SPSS program. The results showed that

Keywords: *continuance intention; COVID-19; e-learning; expectation confirmation model (ECM)*

1. Introducing

The Covid-19 pandemic has brought new habits to many aspects of life. In the world of education, although e-learning is not new, in the pandemic era, its implementation has become an obligation. Sedana and Wijaya (2010) explain that e-learning is a learning activity that uses the benefits of information and communication technology (ICT) systematically by integrating learning components, including across time and space with maintained quality. If executed optimally, the use of e-learning can provide good benefits to the learning process. Venkatesh et al., 2003 stated that the use of ICT, in this case e-learning, can imply better learning performance.

The rules for implementing distance learning in this era can be used as momentum for educational institutions, including at the postgraduate level. The new habits that are finally formed can be taken into consideration in determining future policies. The use of e-learning in the learning process indirectly forms students to become trained. This is a form of providing good ICT skills. E-learning is a form of information technology that can be used as a facility in learning and allows educational institutions to reduce costs and increase the availability of education (Yulius, 2016).

This condition, of course, has a different impact on each student. Therefore, it is necessary to investigate what factors are related to the intention to continue using e-learning. Research is conducted on postgraduate students with the assumption that these postgraduate students have worked so that their study time is in the middle of work activities. The Expectation Confirmation Model (Bhattacharjee, 2001) uses the constructs of perceived usefulness, confirmation and satisfaction to measure continuance intention. This research is an initial study that becomes a reference for further research and can also be used as a consideration in determining policies related to the implementation of sustainable e-learning post-pandemic.

2. Literature Review

E-learning is an ICT-based learning model. Horton (2003) in Mahande & Jasruddin (2018) explains the concept of e-learning is the use of internet technology to create learning experiences. Gilbert and Jones, (2001) mentioned the e-learning work system through the delivery of learning materials through electronic media such as the internet, audio / video, and computer based training. Loogma et al., (2012) stated that e-learning is part of information technology which is a basic substance in social life and the world of work. One of the benefits of e-learning in education is the efficiency of space and time (Sedana and Wijaya, 2010). Ajzen (1991) states that if someone feels like an object (information technology), then they will consider the object as expected and provide benefits in work. Benefits can bring satisfaction to its users, in this case students. The satisfaction that arises is expected to influence the intention to continue using e-learning.

The Expectation Confirmation Model theory (Bhattacharjee, 2010) is a development of the Expectation Confirmation Theory (Oliver, 1980). According to Oliver (1980) repurchase intention is influenced by previous perceived satisfaction. Meanwhile, this satisfaction results from disconfirmation and expectations of a product or service. This is the basis for Bhattacharjee (2001) developing a construct in the ECM model in information systems (ECM-SI), namely SI user satisfaction, degree of user confirmation, and expectations after use of SI that are born from experiences related to perceived usefulness.

Wang (2003) in his research stated that there is a significant relationship between satisfaction and interest in reusing e-learning in the future. Furthermore, Lee (2010) proved that the level of satisfaction was the main predictor that influenced the continuance intention using e-learning. In another study, Park (2020) also proved that satisfaction has an influence on the continuance intention using information technology (smart wearable devices).

Based on this description, the hypothesis is:

H1: Satisfaction is significantly positively related to the continuance intention using e-learning.

Satisfaction, which is the main predictor of continuance intention, according to Bhattacharjee (2010), is previously influenced by perceived usefulness. Someone will say they are satisfied when they feel the usefulness of a technology. In other studies, it is stated that the successful use of e-learning depends on the satisfaction and usefulness perceived by the user (Chen, et al., 2004, Joo, et al., 2017).

Based on this description, the hypothesis is:

H2: The perceived usefulness has a significant positive effect on the continuance intention using e-learning.

H3: The perceived usefulness has a significant positive effect on e-learning user satisfaction.

The usefulness felt by users is strengthened by confirmation which is the result of a comparison between expectations and reality obtained (Bhattacharjee, 2010). In his research, proved that confirmation has a positive effect on perceived usefulness. In addition, confirmation and usability together have a positive effect on user satisfaction (Davis, 1989). This is reinforced by other research which states that confirmation provides a positive relationship with e-learning user satisfaction (Lee, 2010; Dai, et al., 2020; Wu, et al., 2020).

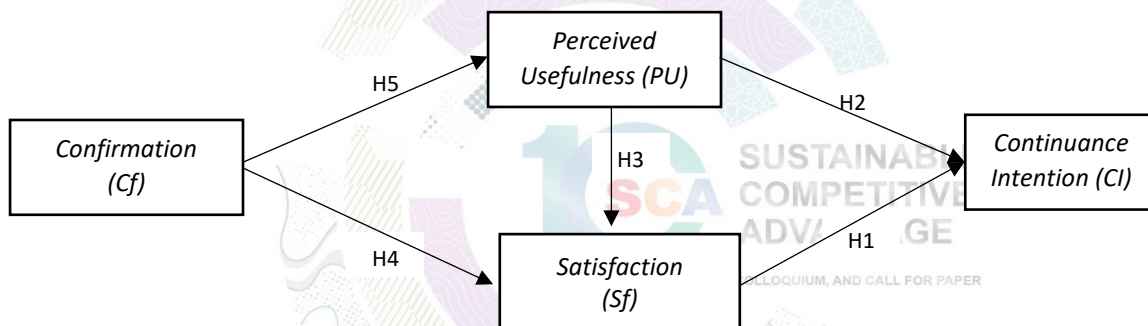
Based on this description, the hypothesis is:

H4: Confirmation has a significant positive effect on satisfaction in using e-learning.

H5: Confirmation is significantly positively related to the perceived usefulness of e-learning.

From the hypotheses formulated above, the research design model has illustrated in Figure 1.

Figure 1. Research Model



3. Research Methodology

This research is a quantitative study with a cross sectional approach. Samples were taken through simple random sampling technique with a population of postgraduate students with a total sample of 59 students. The research model uses the construct of the Theory of Expectation Confirmation Model (Bhattacharjee, 2001) with Perceived Usefulness (PU), Confirmation (Cf) and Satisfaction (Sf) as independent variables that affect Continuance Intention (CI) as the dependent variable. Data obtained from a questionnaire use google form on a Likert scale with a score range of 1-5 (Strongly Disagree - Strongly Agree). Furthermore, the data obtained were analyzed using moderation regression performed with SPSS program.

4. Result

4.1 Reliability and Validity Analysis

The reliability test of the research instrument was carried out using Cronbach's Alpha and it is reliable if the r alpha value is greater than r table (0.7). Meanwhile, the validity test was carried out using Pearson Product Moment, the calculated r value was greater than r table (0.444) with a significance level of 0.05. Based on the results of both tests, all the questions used are reliable with the calculated r value greater than 0.7 and valid with the calculated r value greater than 0.444. The test results are presented in the table below.

Table 1. Reliability Test Results

	Cronbach's Alpha	N of Items
Sf	0,808	4
PU	0,841	4
Cf	0,728	3
CI	0,796	3

Table 2. Validity Test Results

	Pearson Correlation	N of Items
Sf	0,678-0,912	4
PU	0,788-0,860	4
Cf	0,759-0,838	3
CI	0,850-0,880	3

4.2 Regression Analysis

4.2.1 *H1: Satisfaction is significantly positively related to the continuance intention using e-learning.*

Table 3. Regression Analysis Sf - CI

Coefficients^a					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1	(Constant)	2.709	1.489	1.819	.074
	Satisfaction	.543	.095	.602	5.698

a. Dependent Variable: Continuance Intention

Based on the table above, the t value for the variable Sf 5,698 with a p value is 0,000. From these results, it shows that the significance value is $p < 0.05$, so the Sf variable has a significant effect on CI.

4.2.2 H2: The perceived usefulness has a significant positive effect on the continuance intention using e-learning.

Table 4. Regression Analysis PU – CI

Coefficients^a					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	3.767	1.550		2.430	.018
Perceived Usefulness	.455	.095	.536	4.787	.000

a. Dependent Variable: Continuance Intention

Based on the table above, the t value for the PU variable is 4,787 with a p value of 0,000. From these results indicate that the significance value is $p < 0.05$, then the SPU variable has a significant effect on CI.

4.2.3 H3: The perceived usefulness has a significant positive effect on e-learning user satisfaction dan H4: Confirmation has a significant positive effect on satisfaction in using e-learning.

Table 5. Regression Analysis PU – Sf & Cf - Sf

Coefficients^a					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.505	1.758		.857	.395
1 Perceived Usefulness	.441	.108	.469	4.070	.000
Confirmation	.576	.187	.355	3.083	.003

a. Dependent Variable: Satisfaction

Based on the table above, the t value for the PU variable is 4.070 with a p value of 0.000 and for the Cf variable is 3.083 with a p value of 0.003. From these results indicate that the two variables have a significance value of $p < 0.05$, so the PU and Cf variables have a significant effect on Sf.

4.2.4 H5: Confirmation is significantly positively related to the perceived usefulness of e-learning.

Table 6. Regression Analysis Cf – PU

Coefficients ^a						
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	
	B	Std. Error	Beta			
1	(Constant)	3.173	2.106		1.506	.138
	Confirmation	1.095	.176	.635	6.207	.000

a. Dependent Variable: Perceived Usefulness

Based on the table above, the t value for variable Cf is 6.207 with p value is 0.000. From these results indicate that the significance value $p < 0.05$, then the variable Cf has a significant effect on PU.

5. Discussion

Satisfaction has a positive effect on the intention to continue using e-learning. These results indicate that the satisfaction that graduate students feel is a predictor of their intention to continue using it in the future. These results support previous research which states that continuing intention is influenced by satisfaction (Bhattacharjee, 2001; Wang, 2003; Lee, 2010; Park, 2020). The perceived satisfaction can be the basis of student loyalty in using e-learning for the long term in the future.

Perceived usefulness has a positive effect on the intention to continue using e-learning. The usability benefits will make someone feel easy in doing work (Ajzen, 1991). In this case, the use of e-learning makes it easy for postgraduate students to do distance learning. The perceived usefulness is a factor influencing the intention to continue using it in the future. The results of this study support previous research (Bhattacharjee, 2010; Joo, Y. J et al., 2017). Furthermore, perceived usefulness also affects the satisfaction felt by graduate students in using e-learning which in turn can affect the intention to continue using it. This explains that the decision to continue using e-learning depends on user satisfaction and perceived usefulness (Chen, et al., 2004).

Confirmation has a positive effect on student satisfaction in using e-learning. The results of this study indicate that confirmation of the expected expectations of using e-learning can affect student satisfaction. These results support the research of Lee, (2010); Dai, et al., (2020); Wu, et al., (2020) stated that confirmation provides a positive relationship with e-learning user satisfaction. Confirmation is the perception of the similarity of expectations with the reality obtained (Davis, 1989). In this case, students feel satisfied with the use of e-learning after their expectations are confirmed that the facts obtained are in accordance with the perceived expectations. Furthermore, confirmation also has a positive effect on students' perceived usefulness in using e-learning. In this study, there is a positive relationship between the two. This supports research by Bhattacharjee, (2010) which states that confirmation has a positive effect on perceived usefulness. The perceived

usefulness benefits are a condition where someone, in this case a student, believes that the use of e-learning can improve performance in learning. This is obtained from student confirmation before (expectations) and after (reality) using e-learning. After using e-learning, you can feel whether the performance has improved by using e-learning.

6. Conclusion

Based on the results of the study, it shows that all independent variables, namely satisfaction (Sf), perceived usefulness (PU) and confirmation (Cf), provide a significant relationship to continuance intention (CI) on the use of e-learning. In this study there are still limitations that can still be developed for further research. The number of samples used in this study is still very small with a very large population size. This can be done to be able to get maximum results.

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