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Analysis factors acceptance of e-learning using technology acceptance model approach

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ABSTRACT

E-learning is one of the media in the current learning process, but many facts in the field show that the process of using it is not optimal. Many factors affect one of them, from the user's difficulty to operate it. This research aims to identify the factors that influence the use of the e-learning portal at SMK Muhammadiyah 3 Yogyakarta with a teacher and student as respondents. This research uses a quantitative approach with an ex-post-facto approach. The primary data source comes from sharing an online questionnaire (google form) which contains 30 questions using a Likert scale of 5 as an alternative answer. The research subjects were teachers of SMK Muhammadiyah 3 Yogyakarta with 69 teachers. The results showed that the use of e-learning portals by teachers and students is (1) effect bythe e-learning self-efficacy factor on the e-learning portal is still not optimally successful; (2) Effect by complexity factor is still not optimally successful and (3) Effect from motivation factor is getting optimal results.

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Introduction

The development of information technology in recent years has grown at a very high speed so that this development it has changed the paradigm of society in seeking and obtaining information, which is no longer limited to newspaper, audio-visual and electronic information, but also other sources of information that are available. one of them through the internet network. One area that has had a significant on impact technological developments is education. Learning using technology (often termed e-learning) has become a popular approach within higher education institutions due to the continuous growth of Internet innovations and technologies(Al-Adwan, Al-Adwan, and Smedley, 2013). Determinants of the technology acceptance model are the major factors influencing the adoption of the technology(Cheung and Vogel, 2013).

Electronic learning (E-learning) is fast becoming an essential tool that is widely used and implemented by educational institutes and universities across the globe (Ali et al., 2022; Chandra et al., 2022). E-learning is an innovation that can be utilized in the learning process, not only in the delivery of learning materials but also in changes in the abilities of various competencies of students. E-learning is regarded as a mandatory teaching and learning approach in higher education worldwide(Ibrahim et al., 2017). One of the online learning media used in schools is the Learning Management System (LMS). LMS is software that can be used to deliver learning materials and mixed media assets online, monitor practice and learning outcomes, and facilitate communication and collaboration between teachers and students (Surjono, 2013).

SMK Muhammadiyah 3 Yogyakarta is one of the Vocational Schools in the city of Yogyakarta that has developed an LMS as an e-learning portal. Not only in order to practice the ICT-based education model, e-learning portals were also developed to facilitate educational activities when the country was still affected by the COVID-19 virus, one of which had an impact on the application of industrial work practices (prakerin) which could not be carried out face-to-face. To determine the acceptance of the use of e-learning portals at SMK Muhammadiyah 3 Yogyakarta, namely by testing the influence on teachers using the Technology Acceptance Model (TAM) method.

TAM was created by Davis in 1985 to explain and predict how a system will be used (Chuttur, 2009). TAM has 5 main constructs (Davis, 1985)namely (1) Perceived usefulness, (2) Perceived ease of use, (3) Attitude toward using technology, (4) Behavioral intention to use and (5) Actual technology use). The TAM model has become a robust model that is appropriate for predicting the acceptance of several technologies(Wahab and Handayani, 2021; Sokhom and Mekruksavanich, 2021). The application of TAM in the field of learning and teaching for various learning domains implemented to understand the acceptance from the users while using Virtual Reality-based learning media (Hamiltonet al., 2020; Ngai,et al. 2007; Changet al., 2016)

The main advantage of TAM is the parsimony model, which is a simple but valid model (Kurnia, 2020). However, over time, the TAM model has been modified by adding external factors. The general structural model, which included e-learning self-efficacy, subjective norm, system accessibility, perceived usefulness, perceived ease of use, attitude, and behavioral intention to use e-learning, was developed based on the technology acceptance model (TAM)(Park, 2009).Of the many external factors that have been used in previous studies, this study focused on 3 external factors, namely e-learning self-efficacy, complexity and motivation. The TAM model It is a model can explain that the user's point of view will determine their attitude in accepting Virtual Reality-based learning applications(Syed-Abdul, 2019; Martín-Gutiérrez et al., 2017). It has also been suggested that specific cultural differences may affect the strength of some relationships within the TAM model (Sánchez-Franco et al., 2009; Tarhini et al., 2017). It also accepts that culture may act as a moderator for some of the key TAM relationships and explores these moderating effects through the use of individual-level measurement of cultural values within the sample (Chau and Hu, 2002).

Thus, the final result of the TAM model development in this res research aims to: (1) Analyze the influence of e-learning self-efficacy factors on the use of e-learning portals by teachers of SMK Muhammadiyah 3 Yogyakarta; (2) Analyzing the effect of complexity factors on the use of e-learning portals by teachers at SMK Muhammadiyah 3 Yogyakarta; and (3) to analyze the influence of motivational factors on the use of e-learning portals by teachers of SMK Muhammadiyah 3 Yogyakarta.

Methods

Approach

Ex-post facto research refers to social research that does not change the respondent's characteristics (Simon and Goes, 2013) According to the method, this study uses a quantitative approach because it uses data in the form of numbers as a tool to analyze information about what you want to know(Kuntjojo, 2009). Technology Acceptance Model (TAM) was used as the main design in the study. TAM is a theory used to explain individual acceptance of information technology systems (Jogiyanto, 2008).

Subject

The population of this study were all teachers at SMK Muhammadiyah 3 Yogyakarta. The research sample was determined using proportional random sampling, namely the method of taking samples from each sub-population by considering the size of the sub-population. Based on Isaac and Michael's table (1983) to determine the sample size, with a population of 91 teachers, the number of samples taken for this study was 69 teachers. The collected results are then analyzed using the Partial Least Squares-Structural Equation Model (PLS-SEM) technique, which employs the bootstrap model to test the hypothesis. The program used to analyze the answer is SmartPLS version 3.0 (Trial-Full Version).

Data Collection Technique

The factors used in this study are the TAM variable which will be associated with external variables which are included as reinforcing variables, namely e-learning self-efficacy, complexity, and motivation variables.

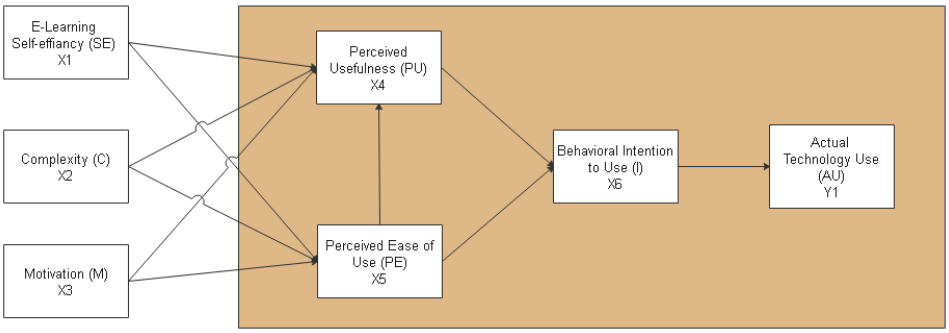

Figure 1. Research Model

Data Collection Instrument

The hypothesis of the investigation is set out in Figure 1. The assumption is based on the relationship between factors, in order to explain which variabels influence the acceptability of SMK Muhammadiyah 3 Yogyakarta's e-learning portals. The instrument used was a questionnaire containing statements that were relevant to the variables that were the subject of the study and were thought to influence application acceptance. The Likert scale model with 5 possible answers is used to help assess the questionnaire so that it can be estimated in quantitative form. Alternative answers include "Strongly Agree (SS) = 5, Agree (S) =4, Simply Agree (CS) = 3, Disagree (TS) = 2, and Strongly Disagree (STS) = 1".

In this research questionnaire, an instrument grid was created from the TAM model variables. This variable is used to analyze acceptance of the E-Learning system at SMK Muhammadiyah 3 Yogyakarta as outlined in a written questionnaire. The variables made in the application acceptance instrument grid for teachers and students can be seen in the following table.

Table1. Instrument Grilles

No	Construct	Author/Year/Title	Indicator	Item
1	E-Learning self-efficacy	Ithriah et al. (2020). Online Learning Self-Efficacy: The Role in E-Learning Succes	a. User confidence in finding information on the E-Learning system	1
		Salloum et al. (2019). Exploring Students' Acceptance of E-Learning Through the Development of a Comprehensive Technology Acceptance Model	b. Belief that users have the ability to use E-Learning	2
2	Complexity	Gardner & Amoroso (2004). Development of an instrument to measure the acceptance of Internet technology by consumers	a. The time required to complete the task with E-Learning	3
		Surya (2014). E-Learning User Behavior Study using the Technology Acceptance Model (TAM) approach (Case Study: Padjadjaran University e-Learning)	b. Merging the results of work from E-Learning with existing work	4
			c. Risk of damage to the E-Learning system and loss of data	5,6

3	Motivation	Sanchez & Hueros, (2010).Motivational factors that influence the acceptance of Moodle using TAM	d. Funding support from schools is needed to increase the use of the E-Learning website	7
		Bachtiar (2014). Analysis of Factors Influencing the Acceptance Rate of E-Learning Applications at the University of Muhammadiyah Surabaya Using the Modified Technology Acceptance Model	e. Legal recognition from schools of the need for E-Learning based learning	8
			f. I need an E-Learning website to support the teaching and learning process	9
4	Perceived usefulness	Technology Acceptance Model (TAM), Davis (1985)	a. Tasks are completed faster with E-Learning	10
			b. Job performance increases with E-Learning	11
			c. Work productivity increases with E-Learning	12
			d. Work effectiveness increases with E-Learning	13
			e. Work is easier to complete	14
			f. E-Learning is useful for work	15
5	Perceived ease of use	Technology Acceptance Model (TAM), Davis (1985)	a. E-Learning is easy to learn	16
			b. E-Learning is easy to do what users want	17
			c. Interactions are clear and easy to understand	18
			d. Interaction flexibility	19
			e. Easily skilled using E-Learning	20
			f. E-Learning is easy to use	21
6	Behavioral intention to use	Technology Acceptance Model (TAM), Davis (1985)	a. Use of E-Learning to get work done	22,23
			b. E-Learning utilization plans in the future	24,25
7	Actual technology use	Technology Acceptance Model (TAM), Davis (1985)	a. Actual use	26,27
			b. Frequency of use	28
			c. User satisfaction	29,30

Table 2. Hypothesis

No	Hypothesis
H1	*E-Learning Self-efficacy* (SE) as a positive and significant effect on *Perceived Usefulness* (PU)
H2	*E-Learning Self-efficacy* (SE) as a positive and significant effect on *Perceived Ease of Use* (PE)
H3	*Complexity* (C) as a positive and significant effect on *Perceived Usefulness* (PU)
H4	*Complexity* (C) as a positive and significant effect on *Perceived Ease of Use* (PE)
H5	*Motivation* (M) as a positive and significant effect on *Perceived Usefulness* (PU)
H6	*Motivation* (M) as a positive and significant effect on *Perceived Ease of Use* (PE)
H7	*Perceived Ease of Use* (PE) as a positive and significant effect on *Perceived Usefulness* (PU)
H8	*Perceived Usefulness* (PU) as a positive and significant effect on *Behavioral Intention to Use* (I)
H9	*Perceived Ease of Use* (PE) as a positive and significant effect on *Behavioral Intention to Use* (I)
H10	*Behavioral Intention to Use* (I) as a positive and significant effect on *Actual Technology Use* (AU)

Results and Discussions

Outer Model

Outer Model Design

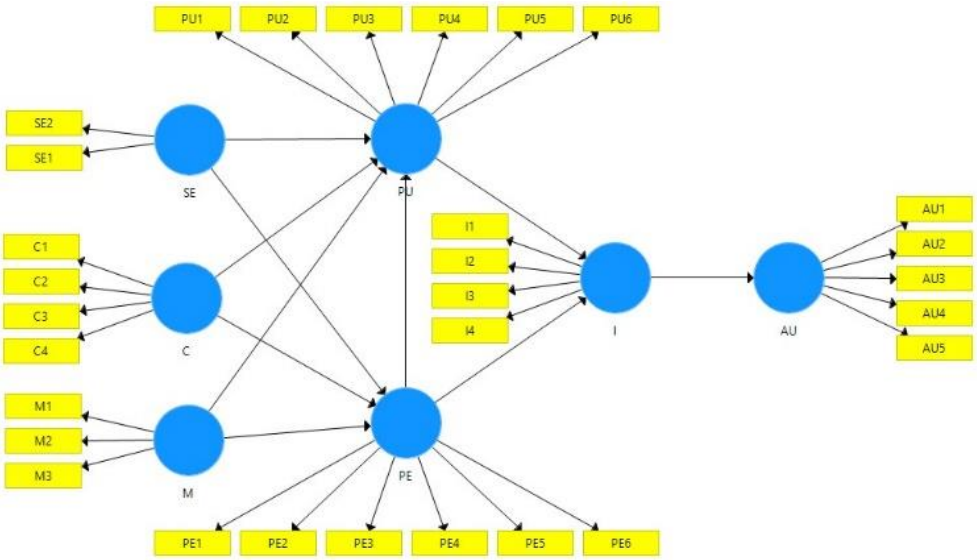

Figure 2. The First of Outer Model

The design of the initial measurement model (the first of outer model) is a regression model for each independent variable and variable with its respective indicators. The model is analyzed first in the outer loadings test until it meets the rule of thumb.

Outer Loadings

The outer loadings test is a condition that must be met before the next stage of regression analysis is carried out. Therefore, in the outer loadings test, it is possible to reduce several indicators until a model is obtained that matches the indicator reliability criteria. The outer loading test explains the absolute correlation between latent variables and each indicator using the indicator reliability criteria > 0,7. The indicators or manifest variables of each latent variable that do not meet the criteria for the reliability of the indicator will be removed (invalid) from the measurement model.

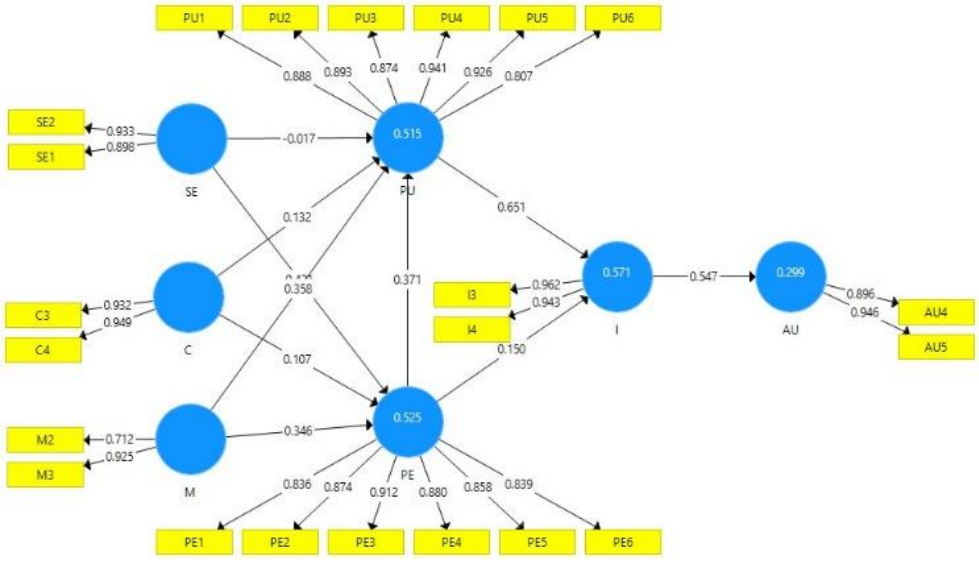

Figure 3. The Final Outer Model

Based on the results of data processing with SmartPLS which can be seen in Table 1, it can be seen that the majority of indicators in each variable in this study have a value of outer loadings > 0.7 except for indicators

C1 = 0,461, C2 = 0,461, M1 = 0,216, AU1 = - 0,035, AU2 = 0,672, and AU3= 0,078 which has a value of outer loadings < 0,7. This shows that the indicator variable has a value of outer loadings > 0,7.

Table 3. Outer Loadings Test Results

Variable	Manifest Variable	*Outer Loadings*	Indicator Reliability Criteria	Information
E-Learning Self-efficacy	SE1	0.933	> 0,7	Valid
	SE2	0.897	> 0,7	Valid
Complexity	C3	0.848	> 0,7	Valid
	C4	0.833	> 0,7	Valid
Motivation	M2	0.739	> 0,7	Valid
	M3	0.905	> 0,7	Valid
Perceived Usefulness	PU1	0.891	> 0,7	Valid
	PU2	0.889	> 0,7	Valid
	PU3	0.872	> 0,7	Valid
	PU4	0.943	> 0,7	Valid
	PU5	0.927	> 0,7	Valid
	PU6	0.805	> 0,7	Valid
Perceived Ease of Use	PE1	0.832	> 0,7	Valid
	PE2	0.874	> 0,7	Valid
	PE3	0.911	> 0,7	Valid
	PE4	0.882	> 0,7	Valid
	PE5	0.860	> 0,7	Valid
	PE6	0.840	> 0,7	Valid
Behavioral Intention to Use	I1	0.660	> 0,7	Valid
	I2	0.802	> 0,7	Valid
	I3	0.888	> 0,7	Valid
	I4	0.758	> 0,7	Valid
Actual Technology Use	AU4	0.896	> 0,7	Valid
	AU5	0.872	> 0,7	Valid

Based on the results of data processing using SmartPLS in Figure 2, there are several indicators do not meet the criteria for the value of outer loadings > 0.7. Indicators that do not meet these criteria, namely C1= 0.461, C2 = 0.461, M1 = 0.216, AU1 = -0.035, AU2 = 0.672, and AU3 = 0.078 so they must be eliminated from the outer model that has been designed. Also, variable indicators with an outer loadings value >0.7 have a high level of validity, thus meeting the indicator reliability criteria shown in Figure 3.

Convergent Validity Testing

Convergent validity testing demonstrates that a set of indicators reflects a single latent variable, and the latent variable supports a set of indications. The average variance extracted (AVE) criterion >0.5 can be used to show this test. The results of testing the convergent validity of the outer model using SmartPLS are shown in Table 3.

Table 4. Convergent Validity Test Results

Variable	***AVE***	***Rule of Thumb***	***Information***
SE	0.838	>0,5	Valid
C	0.885	>0,5	Valid
I	0.907	>0,5	Valid
M	0.681	>0,5	Valid
PE	0.751	>0,5	Valid
PU	0.790	>0,5	Valid
AU	0.849	>0,5	Valid

Discriminant Validity Testing

Discriminant validity testing is a method that explains why a collection of indications should not be considered unidimensional (single). The Fornell-Larcker criteria is an alternate method for determining discriminant validity. According to the Fornell-Larcker criterion, each latent variable's AVE value must be larger than R^2 for all latent variables. The results of testing the discriminant validity of the outer model using SmartPLS are shown in Table 4.

Table 5. Discriminant Validity Test Results (Fornell-Larcker)

Variable	AVE	R^2				Testing ($AVE > R^2$)	Information
		AU	I	PE	PU		
SE	0.838	-	-	0.525	-	SE > PE	Valid
		-	-	-	0.515	SE > PU	Valid
C	0.885	-	-	0.525	-	C > PE	Valid
		-	-	-	0.515	C > PU	Valid
M	0.681	-	-	0.525	-	M > PE	Valid
		-	-	-	0.515	M > PU	Valid
PE	0.751	-	-	0.525	-	PE > PU	Valid
		-	0.571	-	-	PE > I	Valid
PU	0.790	-	0.571	-	-	PU > I	Valid
I	0.907	0.299	-	-	-	I > AU	Valid

Inner Model Analysis

Inner Model Design (Structural Model)

The design of the structural model (inner model) is a regression model that connects the independent variables and fixed variables.

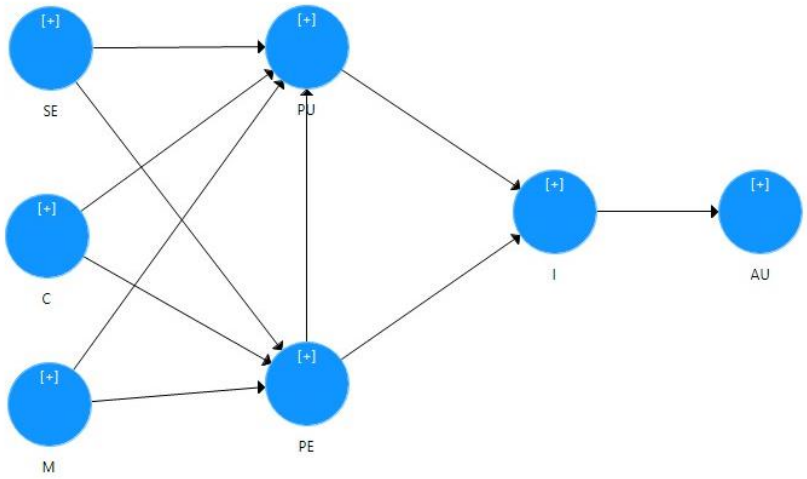

Figure 4. Inner Model

Path Coefficients

According to Lehner and Hass (2009), path coefficient values that are in the range of values of -0,1 to 0,1 are considered insignificant, values greater than 0,1 are significant and directly proportional, and values smaller than -0,1 is a significant value and inversely proportional.

Variable	*Path Coefficients*	Information
SE -> PE	0.421	Significant and directly proportional
SE -> PU	-0.017	Significant and inversely proportional
C -> PE	0.107	Significant and directly proportional
C -> PU	0.132	Significant and directly proportional
I -> AU	0.547	Significant and directly proportional
M -> PE	0.346	Significant and directly proportional
M -> PU	0.358	Significant and directly proportional
PE -> I	0.150	Significant and directly proportional
PE -> PU	0.371	Significant and directly proportional
PU -> I	0.651	Significant and directly proportional

Hypothesis Test

Research hypothesis testing is done by looking at the path coefficient values which are positive or negative and the t-value generated from the analysis using the SmartPLS application which is compared with the t-table

value. The research hypothesis is declared accepted or rejected based on the testing conditions as shown in Table 3 (Lehner and Hass, 2009; Sarwono and Narimawati, 2015).

Table 6. Hypothesis Testing Terms

Hypothesis	Test Conditions	Information
Accepted	• *path coefficients > 0,1 and t-value > t-table*	• Positive and significant effect
Rejected	• *path coefficients* > 0,1 and *t-value<t-table*	• *Positive effect but not significant*
	• -0,1 ≤ *path coefficients* ≤ 0,1 and *t-value<t-table*	• *No effect and no significant*
	• -0,1 ≤ *path coefficients* ≤ 0,1 and *t-value>t-table*	• *No effect and no significant*
	• *path coefficients* < -0,1 and *t-value>t-table*	• *No effect and no significant*
	• *path coefficients* < -0,1 and *t-value<t-table*	• *Negative and not significant*

Table 7. Hypothesis Testing Results

Hypothesis	*Path*	*Path Coefficients*	*t-value(t-statistic)*	Information
H1	SE→PU	-0.107	0.129	REJECTED
H2	SE→PE	0.421	4.321	ACCEPTED
H3	C→PU	0.132	0.801	REJECTED
H4	C→PE	0.107	0.971	REJECTED
H5	M→PU	0.358	2.386	ACCEPTED
H6	M→PE	0.346	3.029	ACCEPTED
H7	PE→PU	0.371	2.122	ACCEPTED
H8	PU→I	0.651	4.911	ACCEPTED
H9	PE→I	0.150	1.037	REJECTED
H10	I→AU	0.547	4.523	ACCEPTED

H1: *E-Learning Self-efficacy* (SE) as a positive and significant effect on Perceived Usefulness (PU)

Testing the first hypothesis of teacher information shows that e-learning self-efficacy (SE) with SMK Muhammadiyah 3 Yogyakarta has no significant impact on the use of e-learning. On the basis of the findings of the evaluation of the inner e-learning model (SE), the value of 0,129 t lower than the t-table of 1,653 so that the hypothesis is rejected.Hypothesis H1 analysis for teacher data obtains a path coefficient value of -0.107 (t-statistic = 0.129 > t-table 1.653). With these results it can be concluded that E-Learning Self-efficacy (SE) has no effect and is not significant on Perceived Usefulness (PU), which means that the teacher is unsure and has not felt the benefits of using the E-learning system. Meanwhile, for student data, the coefficient value is 0.050 (tstatistic = 0.917 > t-table 1.653). With these results it can be concluded that E-Learning Self-efficacy (SE) has no effect and is not significant on Perceived Usefulness (PU), which means that students are not sure of their own abilities in using the E-learning system.

H2: *E-Learning Self-efficacy* (SE) as a positive and significant effect on *Perceived Ease of Use* (PE)

At SMK Muhammadiyah 3 Yogyakarta, testing the second hypothesis with teacher data shows that E-Learning Self-efficacy (SE) has a positive and substantial effect on Perceived Ease of Use (PE) while using E-learning. The findings of the examination of the inner model of E-Learning Self-efficacy (SE) on Perceived Ease of Use (PE) in Vocational Schools yielded a t value of 4,321, which is larger than the t table of 1,653, indicating that this hypothesis is accepted.With these results it can be concluded that E-Learning Self-efficacy (SE) has a positive and significant effect on Perceived Ease of Use (PE), which means that the teacher is confident in his own ability to use the E-learning system. Whereas for student data a coefficient value of 0.217 (t-statistic = 3.786 > t-table 1.653). With these results it can be concluded that E-Learning Self-efficacy (SE) has a positive and significant effect on Perceived Ease of Use (PE), which means that students are confident in their own abilities to use the E-learning system.

H3: *Complexity* (C) as a positive and significant effect on *Perceived Usefulness* (PU)

Testing the third hypothesis using teacher data demonstrates that Complexity (C) has a positive but not statistically significant influence on Perceived Usefulness (PU) while utilizing E-learning at SMK Muhammadiyah 3 Yogyakarta. Based on the findings of the examination of the inner model of Complexity (C) on Perceived Usefulness (PU) in Vocational Schools, a t value of 0,801 is produced, which is less than the t

table of 1,653, and therefore this hypothesis is rejected.Hypothesis H3 analysis for teacher data obtained a path coefficient value of 0.132 (t-statistic = 0.801 > t-table 1.653). With these results, it can be concluded that Complexity (C) has no effect and is not significant on Perceived Usefulness (PU), which means that teachers experience difficulties in using the E-learning system which results in work delays. Meanwhile, for student data, the coefficient value is 0.064 (t-statistic = 1.081 > t-table 1.653). With these results it can be concluded that Complexity (C) has no effect and is not significant on Perceived Usefulness (PU), which means that students find it difficult to use the E-learning system which results in delays in the learning process.

H4: *Complexity* (C) as a positive and significant effect on *Perceived Ease of Use* (PE)

According to teacher data, complexity (C) has a positive but not significant impact on perceived ease of use (PE) while using E-learning at SMK Muhammadiyah 3 Yogyakarta. Based on the findings of the examination of the inner model of Complexity (C) on Perceived Ease of Use (PE) employing E-learning in Vocational Schools, the t value of 0.971 is less than the t table of 1.653, suggesting that this hypothesis is rejected. Hypothesis H4 analysis for teacher data obtained a path coefficient value of 0.107 (t-statistic = 0.971 > t-table 1.653). With these results it can be concluded that Complexity (C) has a positive but not significant effect on Perceived Ease of Use (PE), which means that teachers feel difficulty in using the E-learning system which results in work delays. Meanwhile, for student data, the coefficient value is 0.319 (t-statistic = 5.048 > t-table 1.653).With these results it can be concluded that Complexity (C) has a positive and significant effect on Perceived Ease of Use (PE), which means that students feel helped by the E-learning system.

H5: *Motivation* (M) as a positive and significant effect on *Perceived Usefulness* (PU)

Testing the fifth hypothesis using teacher data demonstrates that Motivation (M) has a positive and substantial influence on Perceived Usefulness (PU) while utilizing E-learning at SMK Muhammadiyah 3 Yogyakarta. The t-value of 2.386 is produced based on the findings of the evaluation of the inner model of Motivation (M) on Perceived Usefulness (PU) utilizing E-learning in Vocational Schools, which is larger than the t-table of 1.653, indicating that this hypothesis is accepted. Hypothesis H5 analysis for teacher data obtains a path coefficient value of 0.358 (t-statistic = 2.386 > t-table 1.653). With these results it can be concluded that Motivation (M) has a positive and significant effect on Perceived Usefulness (PU), which means that the teacher is aware of the importance of the E-learning system in the learning process. Meanwhile, for student data, the coefficient value is 0.335 (t-statistic = 5.096 > t-table 1.653). With these results it can be concluded that Motivation (M) has a positive and significant effect on Perceived Usefulness (PU), which means that students are aware of the importance of the E-learning system in the learning process and feel helped by the existence of this system.

H6: *Motivation* (M) as a positive and significant effect on *Perceived Ease of Use* (PE)

Testing the sixth hypothesis using teacher data demonstrates that Motivation (M) has a positive and substantial effect on Perceived Ease of Use (PE) while utilizing E-learning at SMK Muhammadiyah 3 Yogyakarta. The t-value of 3.029 is larger than the t-table of 1.653 based on the findings of the evaluation of the inner model of Motivation (M) on Perceived Ease of Use (PE) utilizing E-learning in Vocational Schools, therefore this hypothesis is deemed acceptable.Hypothesis H6 analysis for teacher data obtains a path coefficient value of 0.346 (t-statistic = 3.029 > t-table 1.653). With these results it can be concluded that Motivation (M) has a positive and significant effect on Perceived Ease of Use (PE), which means that the teacher is aware of the importance of the E-learning system in the learning process. Meanwhile, for student data, the coefficient value is 0.307 (t-statistic = 5.353 > t-table 1.653). With these results it can be concluded that Motivation (M) has a positive and significant effect on Perceived Ease of Use (PE), which means that students are aware of the importance of the E-learning system in the learning process and feel helped by this system.

H7: *Perceived Ease of Use* (PE) as a positive and significant effect on *Perceived Usefulness* (PU)

Testing of the 7th teacher data hypothesis shows that Ease of Use (PE) perceived in SMK Muhammadiyah 3 Yogyakarta e-learning has a positive and substantial effect on perceived utility (PU). The t value of 2,122 in terms of e-learning in vocational schools is larger than the t table of 1,652 based on the findings of assessment by the internal model of perceived usefulness (PU) for perceived ease of usage (PE) to make this hypothesis acceptable.Hypothesis H7 analysis for teacher data obtains a path coefficient value of 0.371 (t-statistic = 2.122 > t-table 1.653). With these results it can be concluded that Perceived Ease of Use (PE) has a positive and significant effect on Perceived Usefulness (PU), which means that teachers feel useful and are helped by the existence of an E-learning system in the learning process. Meanwhile, for student data, the coefficient value is 0.529 (t-statistic = 7.829 > t-table 1.653). With these results it can be concluded that Perceived Ease of Use

(PE) has a positive and significant effect on Perceived Usefulness (PU), which means that students feel helped by the E-learning system in the learning process.

H8: *Perceived Usefulness* (PU) as a positive and significant effect on *Behavioral Intention to Use* (I)

Testing the eighth hypothesis using teacher data demonstrates that Perceived Usefulness (PU) has a positive and substantial effect on Behavioral Intention to Use (I) while utilizing E-learning at SMK Muhammadiyah 3 Yogyakarta. Based on the findings of the examination of the inner model of Perceived Usefulness (PU) on Behavioral Intention to Use (I) utilizing E-learning in Vocational Schools, the resultant t value of 4.911 is larger than the t table of 1.653, indicating that this hypothesis is accepted. The results of the hypothesis analysis state that Perceived Usefulness (PU) has a positive and significant effect on Behavioral Intention to Use (I), which means that teachers feel ease in using the E-Learning system which makes work easier. Whereas for students the path coefficient value is 0.534 (t-statistic = 7.572 > t-table 1.653). The results of the hypothesis analysis state that Perceived Usefulness (PU) has a positive and significant effect on Behavioral Intention to Use (I), which means that students feel ease in using the E-Learning system which makes doing assignments easier.

H9: *Perceived Ease of Use* (PE) as a positive and significant effect on *Behavioral Intention to Use* (I)

Perceived Ease of Use (PE) has a favorable but not significant influence on Behavioral Intention to Use (I) utilizing E-learning at SMK Muhammadiyah 3 Yogyakarta, according to the 9th hypothesis. The t value of 4.911 is smaller than t table 1.037, so this hypothesis is rejected. Based on the results of the evaluation of the inner model of Perceived Ease of Use (PE) on Behavioral Intention to Use (I) using E-learning in Vocational Schools, the t value of 4.911 is smaller than t table 1.037, so this hypothesis is rejected. The results of the hypothesis analysis state that Perceived Ease of Use (PE) has a positive but not significant effect on Behavioral Intention to Use (I), which means that the teacher finds it difficult to operate the E-learning system which presumably hinders the performance of the teacher thereby making the learning process less maximum. Whereas students get a path coefficient value of 0.258 (t-statistic = 3.609 > t-value 1.653). The results of the hypothesis analysis state that Perceived Ease of Use (PE) has a positive and significant effect on Behavioral Intention to Use (I), which means that students feel helped by the existence of an E-learning system in the learning process.

H10: *Behavioral Intention to Use* (I) as a positive and significant effect on *Actual Technology Use* (AU)

Testing the tenth hypothesis for teacher data demonstrates that Behavioral Intention to Use (I) has a favorable and substantial influence on Actual Technology Use (AU) at SMK Muhammadiyah 3 Yogyakarta utilizing E-learning. Based on the findings of the examination of the inner model of Behavioral Intention to Use (I) on Actual Technology Use (AU) in Vocational Schools, the resultant t value of 4.523 is larger than the t table of 1.653, indicating that this hypothesis is accepted. The results of the teacher data hypothesis test show that the Behavioral Intention to Use (I) variable has a positive and significant effect on the Actual Technology Use (AU) variable, which means that the teacher has an intention to use E-learning technology to support the teaching process both at school and outside school. Whereas for students the path coefficient is 0.658 (t-statistic = 13.811 < t-table = 1.653). The results of the teacher data hypothesis test show that the Behavioral Intention to Use (I) variable has a positive and significant effect on the Actual Technology Use (AU) variable, which means that students have an intention to use E-learning technology to support the learning process.

Conclusions

The effect of the E-Learning Self-Efficacy factor on the use of e-learning portals is still not maximally successful because the Perceived Ease of Use variable on teachers and students gets influential and significant results, while the Perceived Usefulness variable on teachers and students has no effect and does not significant.The effect of the complexity factor on the use of e-learning portals is still not maximally successful because the Perceived Ease of Use variable on the teacher gets influential but not significant results and students get influential and significant results, while the Perceived Usefulness variable on teachers and students has no effect and does not significant.The influence of the motivation factor on the use of e-learning portals gets maximum results because the Perceived Ease of Use variable for teachers and students gets influential and significant results, as well as the Perceived Usefulness variable on teachers and students gets the same results, namely influential and significant.The e-learning self-efficacy factor explains why teachers and students are comfortable utilizing e-learning portals and see the benefits of doing so. However, the e-learning platform is difficult to use for both professors and students. The motivation element for achieving positive outcomes from teachers and students highlights the need for incentive from the school, particularly the

administrator, to give assistance, monitoring, direction, and praise for instructors and students who use e-learning portals.

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