AN E-LEARNING ACCEPTANCE EVALUATION THROUGH UTAUT MODEL IN A POSTGRADUATE PROGRAM

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ABSTRACT

This study aims to evaluate e-learning acceptance through the UTAUT model by showing the contributing variables to the acceptance of e-learning in a Postgraduate Program at Universitas Negeri Makassar, Indonesia. This study was an ex post facto study with 170 samples distributed proportionally. The data were collected through a questionnaire that was developed from UTAUT model variables and indicators. The data collected were analyzed by path. The results of the e-learning acceptance evaluation based on the hypothesis test showed that facilitating conditions, behavioral intention, effort expectancy, performance expectancy, and social influence significantly and positively affected behavioral intention. Facilitating conditions and behavioral intention significantly and positively affected the e-learning acceptance. Variables that greatly contributed to the higher or lower e-learning acceptance were facilitating conditions and behavioral intention. Facilitating conditions were strongly affected by the students' knowledge and internet speed. Meanwhile, the behavioral intention was strongly influenced by the level of students' belief in the future of e-learning and students' eagerness that e-learning be integrated in every subject. Nevertheless, social influence variables need more attention for implementing a better and sustainable e-learning system.

Keywords: UTAUT model, E-learning Acceptance Evaluation, Postgraduate Program

INTRODUCTION

The utilization of Information and Communication Technology (ICT) is thought to be able to provide better performance implications (Venkatesh, Morris, Davis, & Davis, 2003). The utilization of ICT in universities is a valuable asset, especially to support performances (Nasir, 2013). In addition, the universities should understand and manage the risks associated with educational activities that depend on ICTs. The Postgraduate Program of Universitas Negeri Makassar (PPs UNM) is a university in Indonesia that has previously prepared its students to face the various demands and risks of ICT dependency. The era of dependence on ICT has been demonstrated by the current industry 4.0 transformation. The implication is that postgraduate programs have to prepare their students to possess ICT operational skills and internet of things (IoT) capabilities. ICT-based learning, such as e-learning, is one form of preparation. E-learning is a learning process that utilizes ICT systematically by integrating all learning components, including the interaction of learning across space and time, with guaranteed quality (Sedana & Wijaya, 2010). More specifically, Yulius (2016) states that e-learning is a variety of information technologies that facilitate the learning process and allow educational institutions to reduce costs and increase education availability.

At its implementation, the e-learning course of the PPs UNM was programmed in an unstructured curriculum or as a prerequisite for a master thesis exam. Nevertheless, it was also directed to equip students with the ability to use learning technology to support lectures and the competence to face the challenge of digital learning in the present and future (Mahande & Jasruddin, 2017). This is in line with the statement of Trilling & Fadel (2012) that the demands of the 21st century are challenging and give meaning to the importance of cross-cultural global learning and learning that fosters creativity, communication, and collaboration through digital learning.

Although e-learning has been implemented in the learning process, it still needs a good evaluation and well-planned material for improvements and further recommendations. The evaluation of e-learning implementation was performed to test the effectiveness of the e-learning system that had been programmed so far as a prerequisite course. The quality of e-learning can be considered good if the e-learning was tested and revisions or improvements are always being made to the system and its implementation (Yulius, 2016). Ironically, an evaluation of the e-learning implementation of PPs UNM had never been performed, even though the program had been running for seven years. In fact, an evaluation should be done periodically or at least every academic year. This raises the question of whether this organization had met the expected goals, which could not be answered and accounted scientifically. This confirmed the need for an e-learning evaluation of what had been applied so far. This evaluation was an important step in measuring the quality of the e-learning implementation in PPs UNM (Mahande & Jasruddin, 2017). Some studies explain that the quality of information technology implementation and e-learning would always be associated with voluntary user acceptance (Nasir, 2013; Yulius, 2016). Therefore, the extent of the understanding and acceptance by the students of e-learning implementation was the factor that determined the quality of the success of the implementation.

Thus, an acceptance evaluation was required to produce a clear road map of the policy of implementation and development of e-learning and to know how well the e-learning prerequisite course policy was received by the students. In connection with this, an evaluation approach was needed as a solution to the research problem, and because the emphasis was evaluating the students' acceptance of e-learning, the technology acceptance theory/model was considered as the most appropriate to use. One of the most widely used technology acceptance models is the Unified Theory of Acceptance and Use of Technology (UTAUT).

Published studies from various countries show that the UTAUT model can explain the acceptance of e-learning technology. Some examples include:

- the readiness and acceptance of e-learning in Thailand (Ngampornchai & Adams, 2016);
- the intention of using e-learning in Croatia (Babie, Čičin-Šain, & Bubaš, 2016); and
- the model of e-learning acceptance (Kocaleva, Stojanovic, & Zdravev, 2015).

Examples of studies in Indonesia are:

- the empirical study of e-learning acceptance and usage system (Agustin & Mulyani, 2016);
- the users' acceptance of e-learning implementation (Haris & Sugito, 2015);
- the evaluation model of e-learning success and acceptance systems (Pamugar, Winarno, & Najib, 2014);
- the e-learning acceptance study (Prasetyo & Anubhakti, 2011); and
- the preliminary study of e-learning acceptance in postgraduate programs (Mahande & Jasruddin, 2017).

Studies have confirmed that the UTAUT model has been used to evaluate successfully the acceptance of e-learning in several countries, including Indonesia. However, the productive development of UTAUT models varied according to the context of the study. Studies also show that neither universities in Makassar City nor PPs UNM had performed an evaluation of e-learning through the UTAUT model approach, which shows the need to study the evaluation of e-learning acceptance through the UTAUT model approach in PPs UNM students by showing the contributing variables in the acceptance of e-learning. This research contributes to the development of the technology acceptance evaluation model theory and shows the UTAUT variables that have contributed to the evaluation of e-learning acceptance. Thus, it is expected that this evaluation will provide a description of students'

perceptions on each variable and item used as a reference for the implementation and development of the e-learning system for postgraduate programs in the future.

THEORETICAL FOUNDATIONS & HYPHOTHESIS

The Unified Theory of Acceptance and Use of Technology (UTAUT)

The UTAUT model was a comprehensive system before it became a technology acceptance study and had progressed from the previous four key constructs (performance expectancy, effort expectancy, social influence, and facilitating conditions) toward behavior intention for technology acceptance (the use of technology). Currently, UTAUT2 added three new constructs to the previous UTAUT: hedonic motivation, price value, and habit (Venkatesh, Thong, & Xu, 2012).

Performance expectancy is the extent to which an individual believes that using the system would help him or her achieve advantages in a particular job or activity. Effort expectancy is the level of ease associated with the use of the system/technology by users. Social influence is the extent of an individual's perception that other parties believe that it is better to use the system/technology. Facilitating conditions are the extent to which an individual believes that technical and organizational infrastructures are available to support the system/technology usage (Chang, 2012; Venkatesh et al., 2012). Hedonic motivation is defined as having fun or gaining pleasurable things while using technology and has been shown to play an important role in determining the acceptance and usage of systems/technology (Chang, 2012; Venkatesh et al., 2012). Price value refers to the extent that cost and price structures have on system/technology usage and is a predictor of behavioral intent for technology usage. Habit is the extent to which the individual tends to conduct learning behaviors automatically (Chang, 2012).

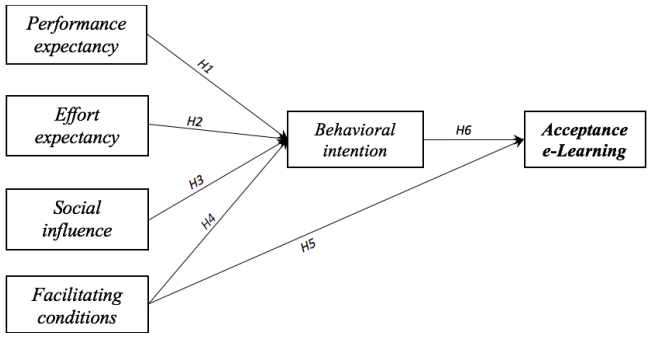
The UTAUT model emphasizes that performance expectancy, effort expectancy, social influence, and facilitating conditions theoretically and empirically affect behavioral intention to use the system/technology, i.e., behavioral intention and facilitating conditions determine usage behavior (Chang, 2012; Venkatesh et al., 2012). In addition, gender, age, and experience were used as individual differentiator variables to view the effects of facility conditions, price values, and habit on behavioral intention and experience as individual differentiators to see the effect of behavioral intention on use behavior.

Hypotheses

A preliminary study previously conducted by Mahande & Jasruddin (2017) on the relationship among UTAUT variables showed that performance expectancy had significant influence on behavioral intention(Agustin & Mulyani, 2016; Handayani & Sudiana, 2017; Ngampornchai & Adams, 2016; Taiwo & Downe, 2013), and that effort expectancy also affected behavioral intention (Agustin & Mulyani, 2016; Nasir, 2013; Ngampornchai & Adams, 2016). Additionally, the same can also be said of social influence (Agustin & Mulyani, 2016; Babie et al., 2016; Fatmasari, 2011; Faulina, 2017; Handayani & Sudiana, 2017; Paola Torres Maldonado, Feroz Khan, Moon, & Jeung Rho, 2011), and facilitating conditions seem to affect behavioral intention and e-learning acceptance (Handayani & Sudiana, 2017). Almost all of the researchers state that behavioral intention affects e-learning acceptance.

The external variables in this study were derived from UTAUT variables, which were obtained from the results of investigations of previous researchers. The selection of variables was based on the highest effect of significance on e-learning acceptance. The focus of this study is to re-examine the significant variables in the evaluation model of e-learning acceptance based on the context in which the study was conducted. Figure 1 presents the relationship among the evaluation variables of e-learning acceptance with the UTAUT model (Hypotheses).

Figure 1. E-learning Acceptance Evaluation Model with UTAUT



H1: There was a significantly positive effect of performance expectancy on behavioral intention.

H2: There was a significantly positive effect of effort expectancy on behavioral intention.
H3: There was a significantly positive effect of social influence on behavioral intention.
H4: There was a significantly positive effect of facilitating conditions on behavioral intention.
H5: There was a significantly positive effect of facilitating conditions on e-learning acceptance.
H6: There was a significantly positive effect of behavioral intention on e-learning acceptance in PPs UNM.

METHODOLOGY

This study uses the nonexperimental quantitative, ex post facto, approach. An ex post facto study is a study in which the independent variables of the study have occurred and the researcher begins with the observation of dependent variables and then finds the cause of them in the study (Kerlinger,1986). The research population was postgraduate students from Universitas Negeri Makassar, Indonesia, who were participating in an e-learning course. The study sample numbered 170 people and was chosen based on the Isaac & Michael (1971) criteria and distributed proportionally. The data collection instrument was a questionnaire developed from the UTAUT item model (Venkatesh et al., 2003) using a four-point Likert scale from 1 (strongly disagree) to 4 (strongly agree). Instruments consisted of performance expectancy (PE), effort expectancy (EE), social influence (SI), facilitating conditions (FC), behavioral intention (BI), and acceptance of e-learning (AEL) variables. All instruments had shown acceptable levels of validity and reliability based on previous research (Kocaleva, Stojanovic, & Zdravev, 2015; Pamugar et al., 2014). Nevertheless, validity and reliability tests were still conducted on the instrument items. The instrument consisted of 28 statements/questions and used the 1–4 scale assessment (disagree strongly = 1, disagree = 2, agree = 3, and agree strongly = 4). Content validity tests involved two experts, one in educational technology and another in evaluation and measurement. For the reliability test, the formula used was the Cronbach's alpha (α) $\geq$ 0.70 (Hair, Black, Babin, Anderson, & Tatham, 2006). The data analysis technique used was the path analysis with the assistance of SPSS 20.0 program. Test requirement analysis included the normality test with the Kolmogorov Smirnov technique (Sig. > 0.05), linearity test (Deviation from Linearity > 0.05), multicollinearity test (tolerance > 0.1 and variance inflation factor/VIF < 10), and homoscedasticity test with Glejser (Sig. > 0.05).

RESULTS

Descriptive Analysis

Means and standard deviations between e-learning variables are shown on Table 1. The high and low average values and standard deviations of each variable are largely determined by the students' perceptions of the statement items. Descriptive analysis results explain that the performance expectancy variable increases the highest mean among other variables. The expectation of improved performance in lectures is one of the items that closely matches the mean value of the performance expectancy. Meanwhile, the social influence variable uses the lowest average value among other variables. Encouragement from other students is an item that influences the low mean value of social influence variables. However, for the sake of this e-learning acceptance evaluation, the results of the descriptive analysis focus describe the contribution of items to each variable. This is done to support the results of the path analysis (hypotheses) in providing an explanation for the high and low influence between variables, both directly and indirectly.

Requirements Analysis Test

The requirements analysis tests used include the normality test, linearity test, multicollinearity test, and homoscedasticity test. The result of the data normality test showed normal distribution data (Sig. 0.66 > 0.05). The result of the linearity test showed the value of Deviation from Linearity exogenous variables PE = 0.172, EF = 0.557, SI = 0.512, and FC = 0.113 to BI endogenous variable. The Deviation Value from Linearity exogenous variables FC = 0.900, BI = 0.130 to endogen variable AEL. The Linearity relationship existed among exogenous variables to endogenous variables because of Deviation from Linearity > 0,05. The result of the multicollinearity test on exogenous variables PE (Tolerance = 0.659; VIF = 1.517), EF (Tolerance = 0.595; VIF = 1.680), SI (Tolerance = 0.678; VIF = 1.475), FC (Tolerance = 0.658; VIF = 1.520) to endogenous variable BI. Exogenous variable FC (Tolerance = 0.867; VIF = 1.154), BI (Tolerance =

Table 1. Descriptive Analysis

Variable and Item Evaluation of e-learning Acceptance	M	SD
Performance Expectancy (PE)	16.42	2.46
Improve performance in lectures	3.45	0.60
Improve competency	3.31	0.59
Ease of using system	3.16	0.65
Increase productivity	3.14	0.65
Provide opportunities for lecturing progress	3.34	0.67
Effort Expectancy (EF)	12.99	1.73
The ease of lecture material	3.17	0.62
The ease of e-learning system operation	3.11	0.66
To gain more knowledge	3.49	0.55
Relevant knowledge information	3.20	0.66
Social Influence (SI)	12.58	1.93
Institutional support	3.26	0.62
Lecturers who participate in encouraging and assisting in course	3.31	0.64
Encouragement from other students	2.86	0.85
Self-eagerness	3.12	0.81
Facilitating Conditions (FC)	15.26	2.45
Institutional resource readiness	3.07	0.80
Student resource readiness	3.18	0.64
The ability of students in operating the system	3.21	0.60
The speed of internet	2.58	0.95
The help from lecturers and colleagues when students experience problems	3.20	0.68
Behavioral Intention (BI)	14.96	2.18
Follow as a test condition	2.73	0.90
Following only one subject	2.67	0.93
Intention of using the system sustainably	3.14	0.68
The system taught the future of learning	3.33	0.66
Want it to remain as a test requirement	3.07	0.81
Acceptance of e-Learning (AEL)	15.13	2.42
To meet the test requirements	2.72	0.90
Use only in class lectures	2.75	0.92
Use outside of class	3.24	0.72
Use the 'add resources' feature to store learning material	3.17	0.66
Use the 'add activity' feature to discuss/collaborate	3.23	0.71

0.867; VIF = 1.154) to endogen variable AEL. No multicollinearity existed because each variable had a tolerance value > 0.1 and VIF < 10. The Homoskedasticity test result through the Glejser test showed exogenous variables PE = 0.074, EF = 0.182, SI = 0.945, and FC = 0.563 to endogenous variable BI. The Exogenous variable FC = 0.727, BI = 0.244 to endogen variable AEL. No heteroscedasticity existed because the p-value was > 0.05. Or it can be supposed that there was homoskedasticity (Sig. > 0,05) on each exogenous variable when paired with an endogenous variable. The test results of the requirement analysis confirmed that we may move on to the hypothesis test.

Hypothesis Testing

The path analysis was performed to test the hypotheses. Four effected variables derived from previous studies were applied as independent variables, whereas behavioral intention and e-learning acceptance were used as dependent variables. Table 2 presents the results of path analysis. From the four independent variables, the variable that most effected behavioral intention was facilitating conditions. However, behavioral intention was the dependent variable that provided a bigger direct effect on the acceptance of e-learning.

Table 2. Path Analysis

Model		β	*t*-value	Sig.
Dependent Variable	**Independent Variable**			
Behavioral Intention (BI)	Performance Expectancy (PE)	.264	3.552	.000
	Effort Expectancy (EE)	.252	3.369	.001
	Social Influence (SI)	.331	4.554	.000
	Facilitating Conditions (FC)	.365	5.085	.000
Acceptance of e-Learning (AEL)	Facilitating Conditions (FC)	.408	5.789	.000
	Behavioral Intention (BI)	.600	9.711	.000
Dependent Variable: Behavioral Intention, Acceptance of e-Learning				

Here we can see that Hypothesis 1 explains that PE had a significant positive effect on BI (β = .264, t-value > 1,974, Sig. < 0.05). Meanwhile, Hypothesis 2 explains that EF had a significant positive effect on BI (β = .252, t-value > 1.974, Sig. < 0.05). Hypothesis 3 explains that SI had a significant positive effect on BI (β = .331, t-value > 1.974, Sig. < 0.05). Hypothesis 4 explains that FC

had a significant positive effect on BI (β = .365, t-value > 1.974, Sig. < 0.05). Hypothesis 5 explains that facilitating conditions had a significant positive effect on e-learning acceptance (β = .408, t-value > 1.974, Sig. < 0.05). Lastly, Hypothesis 6 explains that BI had a significant effect on AEL (β = .600, t-value > 1.974, Sig. < 0.05).

Furthermore, in order to gain more knowledge on the effect of independent variables PE, EE, SI, and FC on AEL dependent variable through BI, the direct, indirect, and total effects are presented below in Table 3.

Table 3 shows five variables that had different effects on the acceptance of e-learning (AEL). FC had the highest influence with a total effect of 0.627, followed by BI with a total effect of 0.600, EE with a total effect of 0.559, PE with a total effect of 0.553, and SI with a total effect of 0.515.

Table 3. Direct, Indirect, and Total Effects

Path	Effects on AEL through BI		
	Direct Effect (DE)	Indirect Effect (IE)	Total Effect (TE)
PE AEL	0.395	0.158	0.553
EF AEL	0.408	0.151	0.559
SI AEL	0.317	0.198	0.515
FC AEL	0.408	0.219	0.627
BI AEL	0.600	--	0.600

In addition to the total effect, PE, EE, SI, FC, and BI variables affected AEL either directly or indirectly. The results of the path analysis on Table 3 explains that the effect of independent variables tends to more effectively affect e-learning acceptance directly when compared through the behavioral intention variable (BI). Nevertheless, behavioral intention (BI) variables were able to contribute greatly in affecting e-learning acceptance. Furthermore, an R square value was used in order to find the value of the affected variables in the model, which can be seen on Table 4.

Table 4. The Result of R Square Path Coefficient

Model		*R*	R Square	Adjusted R Square	Std. Error of the Estimate
a.	BI	.424a	.180	.160	2.001
b.	AEL	.522a	.401	.255	2.087
a.	Predictors: (Constant), FC, PE, SI, EE				
b.	Predictors: (Constant), BI, FC				

Table 4 shows the R-squared value of BI. The result of analysis obtained for the residual path coefficient of PE, EE, SI, and FC to BI or (ε_1) = $\sqrt{1-R^2} = \sqrt{1-0.180} = 0.906$, so the residual coefficient for BI was 0.906. Meanwhile, the result of analysis obtained for the residual path coefficient of PE, EE, SI, and FC to AEL or (ε_2) = $\sqrt{1-R^2} = \sqrt{1-0.401} = 0.773$, so the residual coefficient for AEL was 0.773. The residual coefficients (ε_1 and ε_2) indicated that the other variables out of PE, EE, SI, and FC variables that effected BI and AEL variables were not examined in this study.

The results of the path analysis, path coefficient, and determinant coefficient (*R*2) are presented in the form of an e-learning acceptance model shown in Figure 2 below.

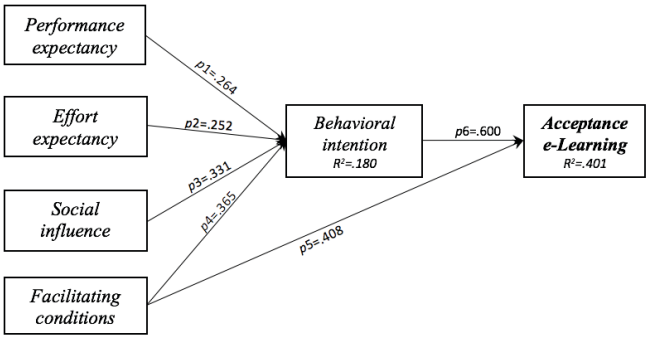


Figure 2. E-Learning Acceptance Evaluation Model

DISCUSSION

Hypothesis 1: There was a significantly positive effect of performance expectancy on behavioral intention.

The results of this study were consistent with previous research that showed that performance expectancy had a direct effect on behavioral intention (Agustin & Mulyani, 2016; Chang, 2012; Ngampornchai & Adams, 2016; Taiwo & Downe, 2013; Venkatesh et al., 2012). The evaluation of e-learning acceptance confirmed that performance expectancy was theoretically and empirically proven to provide an effect on behavioral intention for the e-learning acceptance system in PPs UNM (see Figure 2). The e-learning system was perceived by students to improve performance in lectures, provide opportunities for lecturing progress, and improve competence. In addition, the lack of productivity and ease of using the e-learning system to complete the lecture tasks requires further attention and improvement (see Table 1).

Hypothesis 2: There was a significantly positive effect of effort expectancy on behavioral intention.

The results of this study were in line with the results of previous studies that showed that effort expectancy had a direct effect on behavioral intention (Agustin & Mulyani, 2016; Chang, 2012; Nasir, 2013; Ngampornchai & Adams, 2016; Venkatesh et al., 2012). The evaluation of the acceptance of the e-learning course confirmed that effort expectancy theoretically and empirically affected behavioral intention to accept or use the e-learning system in PPs UNM (see Figure 2). The expectation of students to gain more knowledge through using the e-learning system was a more contributed factor to effort expectancy. Nevertheless, the evaluation of the effort expectancy variable provided the recommendation for the need to pay more attention and further improve the ease of using the e-learning system, the ease of the lecture material, and relevant knowledge information (see Table 1).

Hypothesis 3: There was a significantly positive effect of social influence on behavioral intention.

The results of this study were similar to the results of previous studies that showed social influence directly affected the behavioral intention (Agustin & Mulyani, 2016; Babie et al., 2016; Chang, 2012; Fatmasari, 2011; Faulina, 2017; Paola Torres Maldonado et al., 2011; Venkatesh et al., 2012). The results of the e-learning course acceptance evaluation confirmed that social influence theoretically and empirically affected behavioral intention to accept or use the e-learning system in PPs UNM (see Figure 2). The institutions in this case, PPs UNM and the team of lecturers who participated in encouraging and assisting during the e-learning system course, were the social factors that contributed to the students. Additionally, the lack of self-eagerness and encouragement from other students to follow the course on e-learning system usage needs attention and improvement (see Table 1).

Hypothesis 4: There was a significantly positive effect of facilitating conditions on behavioral intention.

The results of this study were similar to the results of previous studies that showed facilitating conditions directly affected behavioral intention (Chang, 2012; Handayani & Sudiana, 2017; Venkatesh et al., 2012). The result of the e-learning course acceptance evaluation confirmed that facilitating conditions theoretically and empirically affected behavioral intention in accepting or using the e-learning system (see Figure 2). The help that the students received from lecturers and other students when experiencing problems during the e-learning system course was an item of facility condition that contributed to behavioral intention. In addition, internet speed was still slow or unsuitable for the e-learning system course, which was perceived as disruptive in the implementation of the course. Therefore, internet speed needs more attention and needs to be improved (see Table 1).

Hypothesis 5: There was a significantly positive effect of facilitating conditions on e-learning acceptance.

In contrast to the facility condition toward behavioral intention, the facility condition directly affected the use or e-learning acceptance, and it provided more effect than the facility condition toward behavioral intention. The results of this study were in line with the results of previous studies that showed that facilitating conditions directly affected e-learning acceptance (Chang, 2012; Handayani & Sudiana, 2017; Venkatesh et al., 2012). The results of the e-learning course acceptance evaluation confirmed that facilitating conditions theoretically and empirically affected e-learning acceptance in accepting or using the e-learning system in PPs UNM (see Figure 2). The ability of students to operate the e-learning system throughout the course was the facility condition item that showed positive contribution. In addition, the high eagerness of students to participate in the e-learning system course implied the need for an e-learning system curriculum design for all courses and/or every lecture subject (see Table 1).

Hypothesis 6: There was a significantly positive effect of behavioral intention on e-learning acceptance in PPs UNM.

The result of this study resembled the results of previous studies that indicated that behavioral intention directly affected e-learning acceptance (Chang, 2012; Faulina, 2017; Ngampornchai & Adams, 2016; Venkatesh et al., 2012). The result of the e-learning course acceptance evaluation confirmed that behavioral intention theoretically and empirically affected e-learning acceptance (see Figure 2). The higher intention of sustainable usage of the e-learning system and the students' belief that the e-learning system taught them about

the future of learning was what greatly contributed to e-learning acceptance. This meant that the e-learning system needs to be designated as one of the compulsory subjects in all courses of PPs UNM (see Table 1).

The results of path equation analysis in Table 2 show that the greatest variables that directly affect e-learning acceptance at PPs UNM were behavioral intention = 0.600 and facilitating conditions = 0.408. The largest variables that indirectly affected the use of e-learning, but through behavioral intention, was facilitating conditions = 0.219; social influence = 0.198; performance expectancy = 0.158; and effort expectancy = 0.151 (see Table 3). Thus, the variables that influenced the acceptance of e-learning (AEL) were (1) facilitating conditions, (2) behavioral intention, (3) effort expectancy, (4) performance expectancy, and (5) social influence. The most contributing variables to the e-learning acceptance were the independent variable (facilitating condition) and the dependent variable (behavioral intention). The findings of this study have confirmed that five core UTAUT variables can be used to measure or evaluate students' acceptance of e-learning courses implemented by PPs UNM.

IMPLICATIONS FOR EVALUATION AND STUDY LIMITATIONS

As part of the contribution to the evaluation, the UTAUT variable items that show lower values will affect the low e-learning acceptance (see Table 1). The following are the points that will be used as reference for the implementation and future development of e-learning systems:

1. The productivity improvement in e-learning system courses and ease of e-learning system usage to complete lecture tasks were the performance expectancy variables that needed improvement.
2. The practical use of an e-learning system that was easier to operate, the ease of lecture material, and the perception of relevant knowledge information in the e-learning course were the items of effort expectancy variables that needed to be further improved.
3. The self-eagerness and encouragement from other students to follow the e-learning system usage course were the items of social influence that needed more attention.
4. Internet speed was still very slow or unsuitable for the use of e-learning system courses and was the item for the facilitating conditions variable. Based on the results of path analysis, facilitating conditions, such as internet speed, was a variable that greatly affected e-learning acceptance in the postgraduate program. This means that it should deserve special attention.
5. Student participation was not just for the e-learning system course but also for other courses in the postgraduate program. Moreover, the eagerness/intention of students to participate in the e-learning system usage course was not just a requirement for taking the exam on the postgraduate program. This implies that the e-learning system in the postgraduate program needs to be designed for all study courses and/or integrated in every subject.
6. e-Learning acceptance was not just for the classroom or just to pass the prerequisite exam; the students were also self-eager and aware of its usefulness and the importance of this learning for the future. This also confirms that the e-learning system needs to be designed as one of the compulsory courses in the postgraduate programs.

The study of the e-learning acceptance evaluation still has limitations. Evaluation was only performed based on student perceptions, not to the perceptions of leadership and lecturers. The number of respondents was also limited, so path analysis was the only analytical technique used in order to see the direct and indirect effects among evaluation variables. As a result, the indicator reflective effect on latent variables had not been measured, but only observed as a high and low central tendency.

CONCLUSION AND RECOMMENDATIONS

The evaluation of e-learning acceptance was performed using variables and indicators developed from the UTAUT technology acceptance model. The e-learning evaluation model utilized five core variables in UTAUT: facilitating conditions, behavioral intention, effort expectancy, performance expectancy, and social influence. The evaluation of e-learning acceptance was obtained through a hypothesis test that showed that performance expectancy, effort expectancy,

facilitating conditions, and social influence had indirect significantly positive effects on behavioral intention for e-learning acceptance. Facilitating conditions and behavioral intention directly had significantly positive effects on e-learning acceptance. Variables that turned out to provide the biggest effects to e-learning acceptance (see Table 3) were facility condition and behavioral intention. Facilitating conditions were strongly affected by the students' knowledge and the help they received from lecturers and colleagues when they experienced problems. Meanwhile, behavioral intention was strongly influenced by the level of students' belief in the future of e-learning and the students' eagerness so that e-learning can be sustainably integrated into every subject.

This study provides recommendations as outlined in the previous implications, and it recommends more attention to and further research on the low value social influence items variable (see Table 1 and Table 3). Furthermore, the study also recommends exploring further the variables or indicators of e-learning acceptance evaluation usage; increasing the number of respondents and raising the level of analysis to the structural equation modeling analysis and conducting the study in different contexts beyond the postgraduate program.

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