Exploring Factors Affecting the Use of E-Learning in the Learning Process at Private Universities

Elbadiansyah
elbadiansyah@ikippgrikaltim.ac.id

IKIP PGRI Kalimantan Timur, Indonesia

Abstract. The goal of this research is to identify the factors (self-efficacy, subjective norms, perceived usefulness, and perceived ease of use) that influence e-learning adoption. This investigation focuses on a professor teaching at a university. This study's methodology is a test of a proposed theory. Primary data, collected through the administration of online questionnaires to study participants, is used here. Quantitative information is the main type of data used. Three independent variables (perceived ease of use, perceived usefulness, and subjective norms) and one dependent variable (user satisfaction) are used in this research. E-learning implementation is the dependent variable. Three hundred and ninety professors participated in this survey. The researchers in this study chose to use purposive sampling, one of several methods based on predetermined criteria like the presence of an NIDN (National Lecturer Identification Number) or knowledge of the e-learning process or experience with an e-learning system among university professors teaching at private institutions. The researcher also read several works that dealt with the same subject as her own. This study found that e-learning adoption was significantly affected by participants' ratings of the technology's perceived ease of use, usefulness, and subjective norms. The results of this study suggest that educators are skeptical of e-efficacy.

Keywords: perceived ease of use, perceived usefulness, subjective norms, the use of e-learning, private university

1. Introduction

According to [1], an effective learning approach is one that lecturers utilize to help their students learn in the most efficient way possible. The discussion method is one of several learning methods that are commonly used in the world of education because there students interact more closely, work together between learning teams, and express opinions which are very useful and can realize something new if put together in a system that is useful for the continuity of learning in lectures. In any given learning method, it will certainly have advantages or disadvantages, so lecturers must understand various learning methods and use the right method according to the material and learning objectives. It is expected to be able to improve the ability of students in the process of thinking and expressing opinions.

The modern era's rapid development has permeated every aspect of human life, including the field of education, notably in the area of information and communication technologies. Information

and communication technology are increasingly being used in many facets of education, including teaching itself. Online learning facilities, such as e-learning, can be provided through the development of information and communication technology, claim [2]–[4]. E-learning is a type of learning that makes use of internet technology and electronic media (audio/visual); [5], [6] support this. E-learning is currently becoming a new paradigm in the study of contemporary education. Innovation in academic operations is essential of universities. In this situation, the adopted learning system requires a fresh invention, namely the development of learning that no longer relies on paper as a medium. Learning activities are less engaging and pupils are unable to employ their creativity in the classroom because, up until now, knowledge could not be absorbed or made tangible by depending on technologies that are still entirely manual. As a result, the function of easily accessible computers online is crucial in offering a solution and serves as a decent tool for mending less-than-optimal systems (manual).

According to [3], [4], Indonesia changed instantly in line with the Covid-19 pandemic that is happening all over the world at this time changes are happening so fast due to this outbreak, both in terms of the economy and the industrial sector, as well as education which has the most impact on everything. Activities are limited. Plans that have been prepared are no longer available. It's like sailing on a ship, the best option is just everything that manages to get onto the shipbefore the storm hits. Due to Covid-19, a bad policy has now been implemented in the university learning process. The Covid-19 epidemic has impeded face-to-face teaching and learning activities, according to [7]. The Covid-19 outbreak, according to a remote learning system that uses information technology, has become a major stimulus for the advancement of education.

According to [2]–[4], [8], the perceived utility, perceived ease of use, and subjective norms all have an impact on the effectiveness of e-learning as a teaching method at private universities. The term "perceived ease of use" refers to a person's degree of assurance that using information systems is simple and doesn't demand much effort on their part. This convenience will cut down on the time, effort, and energy needed to understand and use information systems. Working with information systems makes people more productive than working manually without them. The frequency of use and the interaction between users and the system, according to [9], can also demonstrate how simple a system is to use. The more often used system suggests that its users are more familiar with, competent with, and comfortable using it. The degree to which a person thinks that using particular information systems would enhance their performance is known as perceived usefulness. According to this definition, perceived usefulness is a viewpoint on the selection process. A person will employ a system if he has faith in its usefulness. On the other hand, if someone doesn't think the information system is valuable, he won't use it. This idea also covers the benefits of the system for users linked to productivity, job performance/effectiveness, importance to job, and general usefulness, according to [1], [3], [10]. Perceived usefulness, as defined by [9], [11], is the degree to which a person believes that using the system will enhance performance. People adopt information technology because they think it will boost their performance and achievement. This idea describes the extent to which the user is thought to profit from using a technology. This study seeks to ascertain the impact of subjective norms, perceived usefulness, and perceived ease of use on the use of e-learning. This study is significant because it is vital for the e-learning method to be used correctly in order for the learning process to meet educational objectives.

2. Method

This study's methodology is a test of a proposed theory. Primary data, collected through the administration of online questionnaires to study participants, is used here. The type of information used is quantitative. There are a total of four variables in this investigation: three independent variables and one dependent variable. Perceived usability, perceived usability, and subjective norms are the independent variables in this research. Use of distance education methods constitutes the dependent variable. The responses came from 390 professors at different universities. The researchers in this study chose to use purposive sampling, one of several methods based on predetermined criteria like the presence of an NIDN (National Lecturer Identification Number) or knowledge of the e-learning process or experience with an e-learning system among university professors teaching at private institutions. In this study, a questionnaire was used as the data collection tool. A questionnaire is an organized set of questions designed to be filled out by respondents. The researcher also read several works that were relevant to the topic at hand. The hypotheses are:

H1: Subjective Norms have a positive and significant effect on the Use of E-Learning

H2: Perceived Ease of Use has a positive and significant effect on the Use of E-Learning

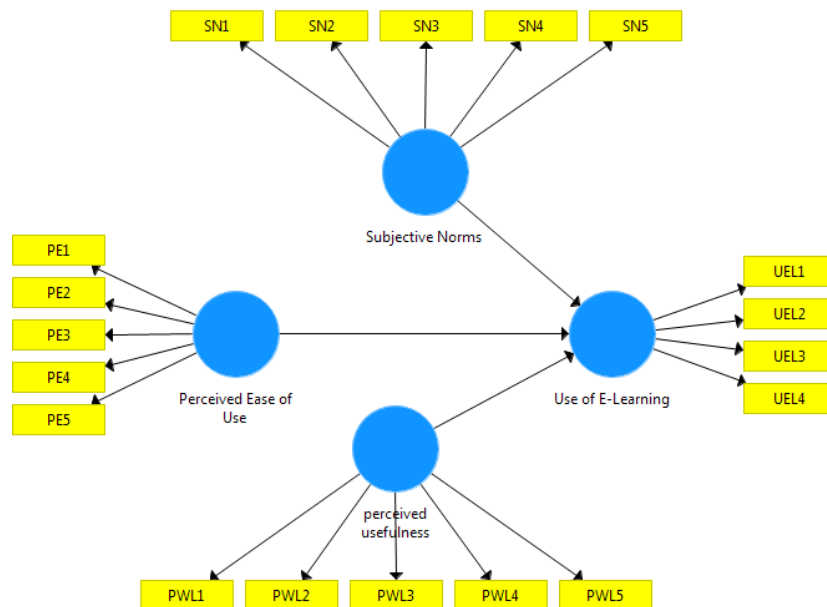H3: perceived usefulness has a positive and significant effect on the Use of E-Learning

Fig 1. Research Model

3. Findings and Discussion

Convergent Validity

Figure 1 shows that the outer loading value for the study variables is greater than 0.7. Some indicators still appear to have an external loading value of less than 0.7. According to [12], the convergent validity criterion can be met with an outer loading value between 0.5 and 0.6. According to the data presented above, all indicators are valid for use in research because no indicator variable has an outer loading value below 0.5.
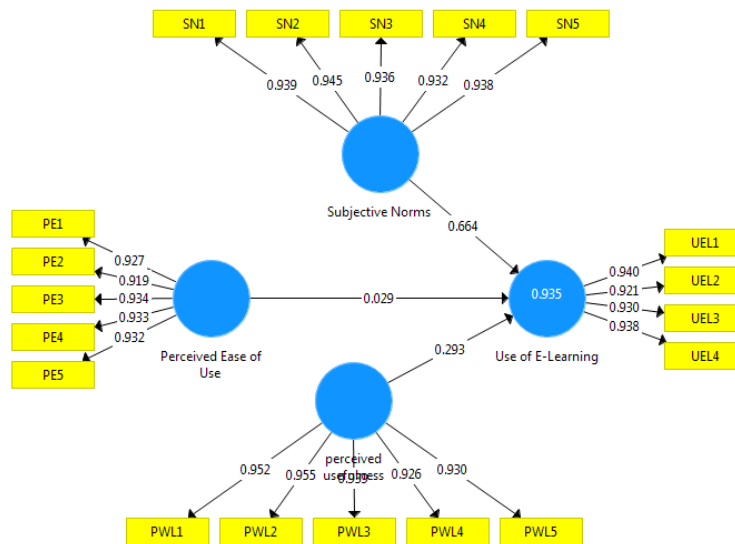

Fig 2. Loading Factors

Discriminant Validity

All of the AVE values for the variables in Table 1 are greater than 0.5. All research variables have excellent discriminant validity because their combined reliability value is greater than 0.7. All study variables can be considered highly reliable because their respective Cronbach's alpha values are greater than 0.7, indicating that they have all reached composite reliability. Since all of the research variables met the criteria for Cronbach's alpha values, it can be concluded that they are all highly reliable.

Table 1.Reliability Testing

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)

Subjective Norms	0.891	0.857	0.709	0.665
Perceived Ease of Use	0.819	0.823	0.803	0.685
perceived usefulness	0.845	0.843	0.704	0.691
Use of E-Learning	0.803	0.812	0.894	0.612

Coefficient of Determination

Table 2. R Square

	R Square	R Square Adjusted
Use of E-Learning	0.935	0.913

Table 2 shows that the R Square value for the Use of E-Learning variable is 0.935, which makes sense in light of the data presented there. According to the results, the subjective norms, perceived ease of use, and perceived usefulness of e-learning account for 93.5 percent of its explanation, while the remaining 6.5% is accounted for by other factors not discussed in this study.

Hypothesis Testing

In this study, the hypotheses were tested by using the T-Statistic and the P-Value. If the P-values are less than 0.05, the research hypothesis is accepted.
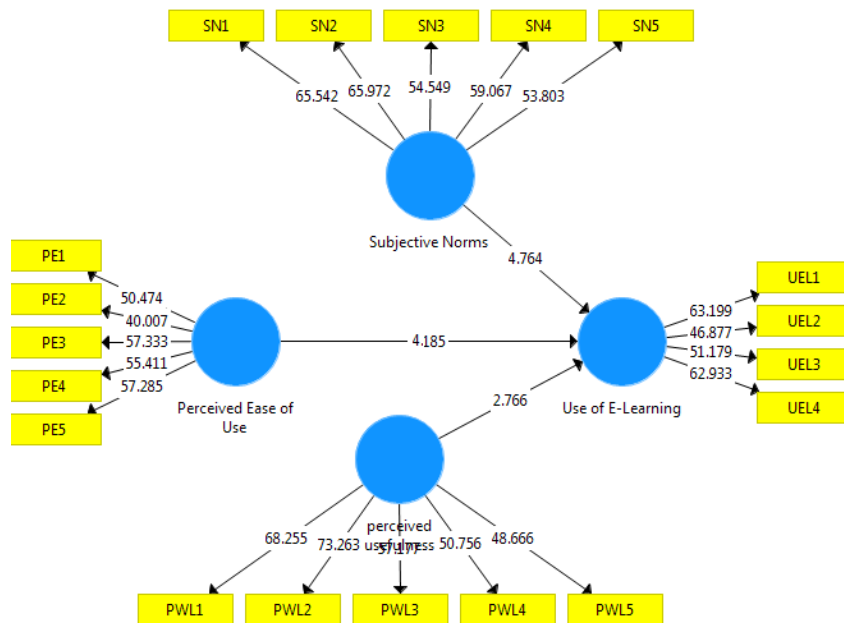

Fig 3. Hypothesis Testing

Table 4. Hypothesis Testing

Hypothesis	T Statistics	P Values	Result
Subjective Norms - E-Learning	4.764	0.000	Supported
Perceived Ease of use - E-Learning	4.185	0.000	Supported
Perceived usefulness - Use of E-Learning	2.766	0.000	Supported

The Effect of of Subjective Norms on the Use of E-Learning

The test results show that the proposed hypothesis is accepted. Thus the hypothesis that subjective norms have a positive effect on the use of e-learning is empirically proven. The results of this study suggest that subjective norms have a substantial impact on how e-learning is used in Private Universities. The significance of the study's findings demonstrates how subjective norms might have a greater impact on how e-learning is used at Private Universities. These findings show that the subjective norm facilitates Private University lecturers' execution of the e-learning-based learning process, allowing for the full accomplishment of the learning objectives even when there is no face-to-face interaction with students. Subjective norm is a person's impression or view of the beliefs of others that will influence their desire in engaging in or refraining from engaging in the action under consideration. Lecturers are urged to employ e-learning in the learning process with students while taking subjectivity into account. This study is in line with studies by [3], [8], which found that people are more likely to want to keep using a system if it fits their demands effectively. Therefore, because e-learning is regarded as effective, instructors will continue to employ it in the learning process. Results of hypothesis testing, in general. The theory of planned conduct backs up this research. According to this hypothesis, perceived behavioral control affects incentive to use a particular activity. According to [2], [4], subjective norms are social elements that show felt social pressure to do or not do something. This is consistent with their findings.

The Effect of Perceived Ease of Use on the Use of E-Learning

The outcomes of the tests support the validity of the working hypothesis. Therefore, the hypothesis that e-learning adoption is boosted by its perceived simplicity is supported by the data. This research shows that the perceived simplicity of e-learning has a major impact on its uptake at Private University. This study's findings have important implications for the implementation of e-learning practices at Private University, suggesting that perceived ease of use can play a more important role than previously thought. These findings provide support for the idea that the perceived simplicity of e-learning platforms makes it simpler for professors at private universities to implement them, ensuring that students continue to receive a high quality education despite the absence of regular face-to-face meetings. The findings of this study are in line with those of [1], [10] that perceived ease of use is a factor that influences the adoption of technology. The findings of this study's hypothesis testing are consistent with the technology acceptance model, which is a theory that seeks to explain and predict users' attitudes about a given information system. The theory behind the Technology Acceptance Model might help you pinpoint what makes a company open to new tech. [3], [4] describe how people's attitudes about technology influence their adoption of it by drawing on the theory of the Technology Acceptance Model. When applied to e-learning, the theory behind the Technology Acceptance Model transforms into a model that can adequately explain how

people feel about using various forms of technology to further their education.

The Effect of Perceived Usefulness on the Use of E-Learning

The outcomes of the experiments support the idea. Therefore, the premise that e-perceived learning's usefulness influences its uptake is supported by the data. Perceived usefulness has a substantial impact on the adoption of e-learning at Private University, according to the results of this study. This study's findings have important implications for the implementation of e-learning strategies at Private University, suggesting that perceived usefulness can play a more significant role in this context. These findings provide support for the idea that instructors at private universities find it simpler to implement e-learning-based teaching methods because of the positive attitudes their students have about them. The perceived utility of an information system is defined as the degree to which a user anticipates an increase in productivity as a result of using it. Educators value e-learning for its convenience and the belief that it can boost students' performance in the classroom when substituted for in-person instruction. Consistent with previous studies, [7], [8], [13]) conclude that an IT system's perceived utility influences its quality. One's perception of an action's usefulness informs one's decision to carry it out. Therefore, if a person thinks IT is helpful, he will employ it. When it comes to explaining and predicting user acceptance of an information system, the findings of this study's hypothesis testing are consistent with the Technology Acceptance Model theory. The elements that determine whether or not an organization will adopt a new piece of technology are difficult to predict, but can be better understood with the help of the Technology Acceptance Model. Consistent with the findings of [6], [14], this confirms that the technology acceptance model is a popular framework for understanding why and how people embrace new forms of technology (TAM). According to the Technology Acceptance Model, two factors—how helpful and simple a given IT system is—decide whether or not an individual would adopt it.

4. Conclusion

The purpose of this study was to investigate how users' perceptions of e-usability, learning's utility, and conformity to social expectations affected their actual e-learning behavior. The results of this study's data analysis indicate that users' perceptions of e-usability learning's have a favorable and statistically significant impact on their adoption of the technology. This research shows that at Private University, e-learning might be more effectively influenced by students' perceptions of how easy it is to use. These findings provide support for the idea that the perceived simplicity of e-learning platforms makes it simpler for university professors to implement them, ensuring that students continue to learn well even in the absence of regular face-to-face interactions. Second, e-learning adoption is influenced favorably and significantly by its perceived utility. This study's findings suggest that students' opinions of e-effectiveness learning's have a significant impact on its adoption and utilization in higher education. Educators value e-learning because they feel it will help them be more effective teachers and make it simpler for students to access course materials without having to attend class in person. Third, there is a favorable and statistically significant effect of subjective norms on e-learning adoption. The findings of this study suggest that subjective norms have a greater impact on the implementation of e-learning at Private University. Teachers are urged

to incorporate e-learning into their classroom strategies by considering students' individual needs.

References

[1]   S. Al-Hajri and A. Echchabi, "Exploring Factors Affecting Successful Acceptance of E-Learning: Innovative Technology Solutions in Oman," *International Journal of Business Administration and Management Research(ISSN Online: 2412 4346)*, vol. 3, p. 1, Mar. 2017, doi: 10.24178/ijbamr.2017.3.1.01.

[2]   Q. Al-Hammouri and E. Abu-Shanab, "Exploring Factors Affecting Users' Satisfaction Toward E-Learning Systems," *International Journal of Information and Communication Technology Education*, vol. 14, pp. 44–57, Jan. 2018, doi: 10.4018/IJICTE.2018010104.

[3]   L. A. Mohammed *et al.*, "Exploring Factors Affecting Graduate Students' Satisfaction toward E-Learning in the Era of the COVID-19 Crisis," *Eur J Investig Health Psychol Educ*, vol. 12, no. 8, pp. 1121–1142, Aug. 2022, doi: 10.3390/ejihpe12080079.

[4]   J. Lee, H.-D. Song, and A. Hong, "Exploring Factors, and Indicators for Measuring Students' Sustainable Engagement in e-Learning," *Sustainability*, vol. 11, no. 4, p. 985, Feb. 2019, doi: 10.3390/su11040985.

[5]   H. McVeigh, "Factors influencing the utilisation of e-learning in post-registration nursing students," *Nurse Educ Today*, vol. 29, no. 1, pp. 91–99, Jan. 2009, doi: 10.1016/j.nedt.2008.07.004.

[6]   A. Ray, P. K. Bala, and R. Jain, "How can topic-modelling of user-reviews reshape market surveys Exploring factors influencing usage intention of e-learning services through a novel multi-method approach," *Int J Bus Inf Syst*, vol. 40, no. 2, p. 259, 2022, doi: 10.1504/IJBIS.2022.123646.

[7]   E. Ayub, W. W. Goh, and S. Y. Wong, *Exploring Factors Affecting Learners' Acceptance of MOOCs Based on Kirkpatrick's Model*. 2017. doi: 10.1145/3026480.3026490.

[8]   Y. Gupta, F. M. Khan, and S. Agarwal, "Exploring Factors Influencing Mobile Learning in Higher Education – A Systematic Review," *International Journal of Interactive Mobile Technologies (iJIM)*, vol. 15, no. 12, p. 140, Jun. 2021, doi: 10.3991/ijim.v15i12.22503.

[9]   N. Dyah Wulanningtyas, "Increasing Interest And Learning Outcomes In Learning Basic Of Industrial Chemical Engineering Using Natural Materials In The Environment Through Experimental Method For Students Of Class X TKI 2 SMK Negeri 3 Kendal Semester 1 Academic Year 2022/2023," *Universal Journal of Science and Technology (UJoST)*, vol. 1, no. 2, pp. 75–83, 2022, doi: https://doi.org/10.11111/ujost.v1i2.69.

[10]   N. Alqahtani, A. Innab, and G. Bahari, "Virtual Education During COVID-19: Exploring Factors Associated With E-Learning Satisfaction Among Saudi Nursing Students.," *Nurse Educ*, 2020.

[11]   A. S. Rizal and A. Syaifulloh, "STUDENT CORNER LEARNING CONSTRUCTION AT MTS-MA AL-QUR'AN LA RAIBA HANIFIDA JOMBANG," *Journal of Industrial Engineering & Management Research*, vol. 2, no. 4, pp. 330–346, Sep. 2021, doi: 10.7777/jiemar.v2i4.211.

[12]   Agus Purwanto and Yuli Sudargini, "Partial Least Squares Structural Squation Modeling

(PLS-SEM) Analysis for Social and Management Research : A Literature Review," *Journal of Industrial Engineering & Management Research*, vol. 2, no. 4, pp. 114–123, 2021.

[13] R. Cakir and E. Solak, "EXPLORING THE FACTORS INFLUENCING E-LEARNING OF TURKISH EFL LEARNERS THROUGH TAM," 2014.

[14] Agus Purwanto, Masduki Asbari, Teguh Iman Santoso, Vip Paramarta, and Denok Sunarsi, "Social and management research quantitative analysis for medium sample: comparing of Lisrel, Tetrad, GSCA, Amos, SmartPLS, WarpPLS, and SPSS," *Jurnal Ilmiah Ilmu Administrasi Publik: Jurnal Pemikiran Dan Penelitian Administrasi Publik*, vol. 10, no. 2, 2020, doi: https://doi.org/10.26858/jiap.v10i2.22804.