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Application of Tam to the Use of E-Learning

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Abstract: *The development of an increasingly rapid era, especially in the field of information and communication technologies has penetrated in every joint of human life, especially in the world of education. Information and communication technologies themselves can provide online learning facilities, one example is e-learning. This study aims to determine the effect of perceived ease of use, perceived usefulness, subjective norms, and self-efficacy on the use of e-learning. The object of this research is a lecturer at Hasanuddin University. This research was conducted by distributing questionnaires to the respondents and then the results of the research were analyzed using PLS.The results of this study indicate that perceived ease of use, perceived usefulness, and subjective norms have a significant effect on the use of e-learning. This research implies that lecturers feel unsure in using e-learning.*

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I. Introduction

Education is one of the places for developing the potential of students. The national education carried out aims to improve intelligence and the dignity of the nation, to create human and Indonesian people who believe and are devoted to God Almighty, qualified and independent so that they are able to build themselves and the surrounding community and can meet national development needs and are responsible for development nation. In the face of competition in this era of globalization, the wheel of education must be designed in such a way that the educational process can go hand in hand with the development of advanced technology.

In the current situation Covid-19, there has been a terrible policy in the education process in universities. The Covid-19 pandemic has hampered teaching and learning activities which usually take place face-to-face[7]. The learning system is carried out remotely by utilizing information technology, saying that the Covid-19 outbreak has actually become a great catalyst that spurs the world of education. Such as encouraging more use of information technology in distance learning activities. E-Learning is a must during this pandemic.

E-*learning* as an-based learning model *online* is very important and relevant to current conditions, both for lecturers and students. Some of the benefits of *e-learning* include according to[8], namely with *e-learning* it can shorten learning time and make study costs more economical, *e-learning* facilitates interaction between students and materials, students can share information and can access learning materials at any time and repeatedly, with such conditions students can further strengthen their mastery of learning materials.

Higher education as an educational institution is one of the important educational facilities in the process of value and knowledge transfer that takes place between educators, namely lecturers and students as students, so that from this process it is expected to be able to produce superior individuals and be able to make a significant contribution. for the betterment of the nation and the state. An effective learning method is a method used by teaching lecturers to achieve learning objectives which are expected to produce maximum learning. The development of an increasingly rapid era, especially in the field of *information and communication technologies* has penetrated in every joint of human life, especially in the world of education. *Information and communication technologies* themselves can provide learning facilities *online*, one example is *e-learning. E-learning* is a learning method using electronic media (audio/visual) through internet technology.

On the other hand, the system *e-learning* is a challenge for the world of education. In its implementation, using technology will provide different behavioral responses and perceptions for lecturers and students. One of the theories about the use of information technology systems that is considered very influential and is generally used to explain individual acceptance of the use of information technology systems is the Model*Technology Acceptance* /TAM[4]. TAM was first developed by Davis[1] which is the development of the*Theory of Reasoned Action (*TRA) by Ajzen and Fishbein (1975). While Davis *et al*. (1989) revealed that the level of user acceptance of information technology systems in the TAM model is determined by 6 constructs, namely: *external variables,* user perceptions of *perceived ease of use,* user perceptions of *perceived usefulness,* attitudes In using *(attitude toward using),* attention to use *(behavioral intention to use),* and *actual usage (actual usage).*

E-learning as a learning system at Hasanuddin University is certainly influenced by several things. Perceived ease of use(*perceived ease of use*) can convince users that the information technology to be applied is

an easy thing and not a burden for them. Davis (1989) states that perceived ease of use is the degree to which a person believes that the use of a particular system can reduce one's effort in doing something. *Perceived usefulness* which is the perceived usefulness of using a system explains that users of certain information systems will improve their performance after using the system. In addition to perceived ease of use and perceived usefulness, another thing that influences the use of *e-learning* is subjective norms. This study aims to determine how the effect of *perceived ease of use*, *perceived usefulness*, and subjective norms on the use of *e-learning*.

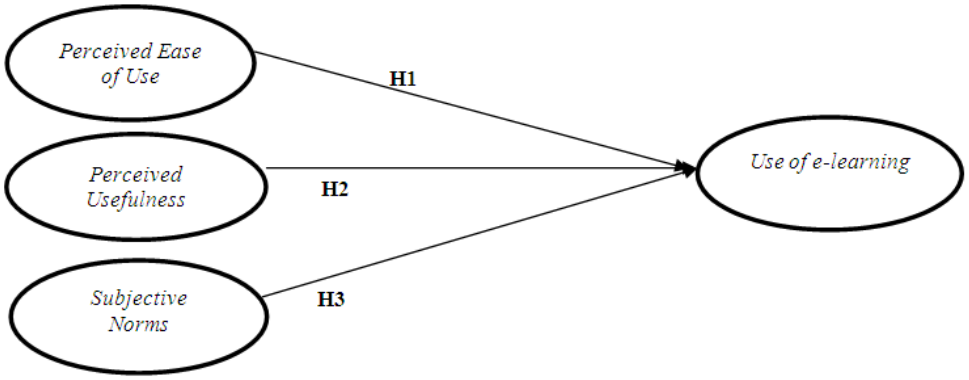

Figure 1. Conceptual Framework

II. Materials and Methods

This research was conducted at Hasanuddin University. The design of this research is hypothesis testing (hypothesis testing). The time used for this research is three months. The population of this research is all lecturers of Hasanuddin University.

Research Design: Survey method using a questionnaire

Research Location: This research was conducted at Hasanuddin University

Research Time: January 2021 to March 2021

Number of Samples: 94 Respondents

Sampling Techniques: Sampling in this study was using the purposive sampling method, which is one of the sampling techniques. The sample is based on certain criteria, namely Hasanuddin University lecturers who already have an NIDN (National Lecturer Identification Number), Hasanuddin University lecturers who already know and understand what the e-learning process is, and Hasanuddin University lecturers who in the learning process have used the e-learning system. learning.

Respondent Profile: the profile of the respondents who became the sample of this study. Most of the respondents came from the faculty of economics and business (59%) with ages between 46-55 years 32% and male gender 59%. The majority of respondents' teaching experience is above 25 years (32%) with the majority of the last education being doctoral/S3 (67%). In conducting the e-learning-based learning process, the majority of respondents use the Sicola, Zoom, Meet, Teams, Google Classrooms, WA, and Telegram platforms (60%).

Research Procedure

After the information related to the research topic is obtained, a questionnaire is made based on the indicators of each variable. A well-designed questionnaire was then distributed to respondents to collect data and information related to the research problem. The questionnaire contains respondent information ranging from age, gender, length of teaching, department, and media used in the learning process. Each variable in the questionnaire consists of several statements that can be chosen by the respondent, ranging from the answer to disagree to strongly agree. Questionnaires were distributed to the faculties at Hasanuddin University via google form.

Data Analysis Data

Were analyzed using the Partial Least Square (PLS) approach. Partial Least Square is an equation model of Structural Equation Modeling (SEM) based on components or variants. To test the construct validity and reliability of the instrument, a measurement test or outer model was used. The construct validity test in Partial Least Square was conducted through Convergent Validity and Average Variance Extracted (AVE) tests. The reliability test in Partial Least Square can use the composite reliability method and cronbach alpha[3]. After the data is tested using the measurement test or the outer model, the data is then tested using the structural model test or the inner model to determine the relationship between latent variables.

III. Result

The results of descriptive statistics on five variables show that the PEOU variable has a minimum value of 1 and a maximum value of 5. The mean value ranges from 3 to 4 with a Standard Deviation value of 0.871.

The PU variable has a minimum value of 1 and a maximum value of 5. The mean value ranges from 3 to 4 with a Standard Deviation value of 0.904. The Subjective Norm variable has a minimum value of 1 and a maximum value of 5. The mean value ranges from 4 to 5 with a Standard Deviation value of 0.754. The usage variable *E-learning* has a minimum value of 1 and a maximum value of 5. The Value *mean* ranges from 4 to 5 with a *Standard Deviation value* of 0.762 (Table 1).

Table no 1. Descriptive statistics of Reseacrh Variables

Variable	N	Minimum	Maksimum	Mean	Std. Deviation
PEOU	94	1	5	3,93	0,871
PU	94	1	5	3,84	0,904
Norms Subjective	94	1	5	4,29	0,754
Use of E-Learning	94	1	5	4,39	0,762

Source : Data Processing Results with SmartPLS ver.3.2.1 (2021)

Test Measurement or *Outer Model*

In the test results of the measurement model with the PLS *algorithm*, there are values *loadings* (indicators)of the four latent constructs and the values *path* of the exogenous constructs PEOU, PU, and Subjective Norms against one endogenous construct. The use of *e-learning* is the results of examination and assessment of the criteria for *Goodness of Fit* (GoF) have a *loading factor* above 0.493 so it is feasible to be maintained. This means that each question from each respondent has a feasibility as a benchmark for the variables studied. So that testing for the next model does not need to be carried out, because it has met the requirements for further testing

The results of the convergent validity examination have met the criteria (table 2). The consistency reliability results show that the four latent constructs, namely PEOU, PU, and Subjective Norms, and the use of *E-learning* have value *composite reliability* of 0.935; 0.948; 0.948; and 0.964 (four values of cr 0.7) and *Cronbach's alpha value* of 0.915; 0.934; 0.929; and 0.929 (four values of ca 0.6). It can be concluded that all six latent constructs (PEOU, PU, Subjective Norms, and Use of *E-learning*) are stated to be *reliable* (table 3).

Table 2 Convergent Validity Check Results

Latent Variable (Construct)	AVE	information
PEOU	0,706 > 0,5	Valid
PU	0,754 > 0,5	Valid
Norms Subjective	0,785 > 0,5	Valid
Use of E-Learning	0,749 > 0,5	Valid

Source : Data Processing Results with SmartPLS ver.3.2.1 (2021)

Table 3 Internal Consistency Realibility Value

Latent Variable (Construct)	*Cronbach's Alpha*	*Composite Reliability*	Information
PEOU	0,915 ≥ 0,60	0,935 ≥ 0,70	Reliabel
PU	0,934 ≥ 0,60	0,948≥ 0,70	Reliabel
Norms Subjective	0,929 ≥ 0,60	0,948 ≥ 0,70	Reliabel
Use of E-Learning	0,929 ≥ 0,60	0,964 ≥ 0,70	Reliabel

Source : Data Processing Results with SmartPLS ver.3.2.1 (2021)

Effect Test Results

Table 4 shows the results of the test for the effect of the exogenous PEOU construct on the endogenous construct. The use of *E-learning* has a sample mean value of 0.211 with a t-count of 2.916 (> 1.64) and a p-value of 0.004 (< 0.05). . This shows that Hypothesis 1 is accepted, which means that PEOU has a positive effect on the *use of E-learning*. The effect of exogenous PU constructs on endogenous constructs The use of *E-learning* has a sample mean value of -0.207 with a t-count of 2.276 (> 1.64) and a p-value of 0.023 (< 0.05). This shows that Hypothesis 2 is accepted, which means that PU has a positive effect on the *use of E-learning*. The effect of exogenous constructs of Subjective Norms on endogenous constructs The use of *E-learning* has a sample mean value of 0.531 with a t-count of 5.068 (> 1.64) and a p-value of 0.000 (< 0.05). This shows that Hypothesis 3 is accepted, which means that the Subjective Norm has a positive effect on the *use of E-learning*.

Table 4 Test Results Effect of

Hypothesis	Relationship	Hope	*Original Sample*	*Sample Mean*	t-Hitung	P-*Value*	Conclusion
H1	PEOU→Use of E-Learning	(+)	0,212	0,211	2,916	0,004	H1 Diterima
H2	PU→ Use of E-Learning	(+)	-0,200	-0,207	2,273	0,023	H2 Diterima
H3	Norms Subjective→Use of E-Learning	(+)	0,530	0,531	5,068	0,000	H3 DIterima

Source : Data Processing Results with SmartPLS ver.3.2.1 (2021)

IV. Discussion

In this study, it can be seen that there are several aspects that significantly affect the use of *e-learning,* namely*perceived ease of use, perceived usefulness*, and subjective norms.

Perceived ease of use significantly affects the use of *e-learning* atHasanuddin University. This means that *perceived ease of use* can better influence the process of using *e-learning* atHasanuddin University. These results are evidence that the *perceived ease of use* makes it easier for Hasanuddin University lecturers to carry out thebased learning process *e-learning*- so that learning still runs well even without direct face to face with students and what the learning objectives can be fully achieved. One of the factors that influence the use of technology is the *perceived ease of use*[6].

Perceived usefulness affects the use of *e-learning* atHasanuddin University. This means that *perceived usefulness* can better influence the process of using *e-learning* atHasanuddin University. These results are evidence that the *perceived usefulness* makes it easier for Hasanuddin University lecturers to carry out thebased learning process *e-learning*- so that learning still runs well even without face-to-face contact with students and what the learning objectives can be fully achieved. Perceived usefulness*(perceived usefulness)* is defined as the extent to which a person believes that the use of certain information system will improve its performance. With *perceived usefulness*, lecturers believe that the use of *e-learning* in the learning process can improve performance and make it easier for students to receive lecture material without face to face. Perceived usefulness*(perceived usefulness)* affect the quality of an information system technology[5,9]. *Perceived usefulness* is a belief (belief) about the decision-making process in taking an action. Thus, if someone believes that information technology is useful then he will use it.

Subjective norms significantly affect the use of *e-learning* atHasanuddin University. The meaning of the findings of this study shows that subjective norms can better influence the process of using *e-learning* atHasanuddin University. These results are evidence that the subjective norm makes it easier for Hasanuddin University lecturers to carry out the based learning process *e-learning*- so that learning still runs well even without direct face to face with students and what the learning objectives can be fully achieved. Subjective norm (subjective norm) is a person's perception or view of the beliefs of others that will affect interest in doing or not doing the behavior being considered[4] With subjective considerations, lecturers are encouraged to use *e-learning* in the learning process with students. State that individuals will tend to have the intention to continue to use a system if the system meets their needs efficiently[6,10]. Thus, based on subjective norms, lecturers will continue to use *e-learning* in the learning process because it is considered efficient.

V. Conclusion

In situation pandemic of covid-19 the use of *e-learning* in the learning process is very important. *Perceived ease of use, perceived usefulness* and subjective norms affect the use of *e-learning* in higher education.Technological advances require the world of education to be able to prepare for technology-based learning. A good understanding of the system *e-learning* can help the online learning process run optimally.

References

[1]. Davis, F.D. 1989. Perceived usefulness, perceived ease of use, and user acceptance of information technology. MIS Quarterly. 13(3). 319-340. Dunham, R.B., Grube, J.A. &Castenada, M.B. 1994. Organizational

[2]. Fishbein, M. &Azjen, I. 1975. Belief, attitude, intention and behavior: An introduction to theory and research. Reading, MA.: Addison-Wesley

[3]. Hartono, J., &Abdillah, W. (2014). Konsepdanaplikasi (Partial least square) untukpenelitianempiris. *Yogyakarta: BpfeUgm*.

[4]. Jogiyanto, H. M. (2007). Sisteminformasikeperilakuan. *Yogyakarta: Andi Offset*.

[5]. Priatno. 2016. PenerimaanBukuSekolahElektronik (BSE) Paa SMA di Jakarta MenggunakanPendekatanTechonologyIn Acceptance Model. *JurnalInformatikadanBisnis,* 1-9.

[6]. Rahayu, F. S., Budiyanto, D., &Palyama, D. 2017. AnalisisPenerimaan E-Learning Menggunakan Technology Acceptance Model (Tam) (StudiKasus: UniversitasAtma Jaya Yogyakarta). *JurnalTerapanTeknologiInformasi*, *1*(2), 87–98.

[7]. Rusdiana, E., &Nugroho, A. (2020). Responmahasiswapadapembelajaran daring bagimahasiswamatakuliahpengantarhukum Indonesia UNESA. *Integralistik*, *31*(1), 1-12.

[8]. Rohmah, N. (2020). PeningkatanHasilBelajarPKnMelalui Model Word Square Kelas 3 MIS NU 2 Pontianak. *EDUCARE: Journal of Primary Education*, *1*(2), 101-118.

[9]. Tiana. Sugiharto, B. Umiyati, I. 2016. Analysis of System Quality , Information Quality and Perceived Usefulness To User Satisfaction. *Jurnal of Accounting for Sustainable Society (JASS)*, *1*(1), 48–71.

[10]. Silva, P. (2015). Davis' technology acceptance model (TAM)(1989). *Information seeking behavior and technology adoption: Theories and trends*, 205-219.

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