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Evaluation of Acceptance Of E-Learning Information System Using Tam (Technology Acceptance Model) At Esa Unggul University

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***Abstract**: Improving the quality of education is an important thing that must be done by every educational institution. The use of information technology tools that are currently widely used in universities is E-Learning. Lack of socialization about e-learning information systems from universities, the difficulty of students capturing material given by lecturers when courses are conducted online (E-Learning), lack of interaction between students and lecturers in e-learning information systems. This study aims to analyze the benefits and convenience factors for the acceptance of E-learning information systems using the Technology Acceptance Model (TAM). The sampling technique uses saturated samples, with 45 respondents. For data analysis techniques using multiple linear regression techniques with quantitative research types, and data processing tools using SPSS 16.0 software for windows. The results of this study are the perceived usefulness variable has a t-count value (1715) <t-table (1,680) and H1 is accepted, the perceived ease of use variable has a t-count value (1,158) <t-table (1,680) and H2 is accepted, and the results of the f-test have the value of f-count (1682)> f-table (3.21) or the value of sig (0.000) <α (0.10) and H3 is accepted it can be concluded reliable.*

***Keywords:** Evaluation, E-Learning Information System, TAM (Technology Acceptance Model)*

I. PRELIMINARY

Improving the quality of education is an important thing that must be done by each institutioneducation. Utilization of scientific and technological advances needs to be done in order to be able to achieve organizational goals effectively and efficiently. The use of technology, especially information technology, is currently widely used as a teaching and learning aid to facilitate students in absorbing course material. The use of information technology tools that are currently widely used in universities is e-learning.

*E-learning*is learning material through electronic media such as; audio / video tape, CD-ROM, television, satellite and computers both connected via the internet / intranet or stand alone computers [1]. Although from this definition it is stated that e-learning can use a variety of electronic media but the application of e-learning that is most often used in the world of university education is done online.

*E-Learning*Esa superior university was utilized on April 26, 2006. The schedule of courses at Esa Superior University is divided into two namely online (e-learning) and face-to-face. E-learning at Esa superior university Citra Raya there are several features, namely a forum to conduct discussions between students and lecturers, students can access the material given by lecturers as learning and students can do the assignments given by lecturers by uploading answers. All academic services can be accessed via the webhttps://elearning.esaunggul.ac.id/.But the emergence of problems such as lack of socialization about e-learning information systems from the university, the difficulty of students capturing material given by lecturers when the courses are conducted online (e-learning), lack of interaction between students and lecturers in the e-learning information system. It is feared that teaching and learning activities are ineffective and inefficient, therefore the superior university needs to

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know and evaluate acceptance in the application of e-learning information systems. The intended acceptance is whether the ease and usefulness that exists in the system can be accepted by students (users).

The level of acceptance of information systems by users can be a benchmark for assessing the acceptance of an information technology by users. TAM is a useful behavior model to answer the question why many information technology systems fail to be applied because the user has no intention to use it and TAM aims to explain and estimate user acceptance of an information system.

***Technology Acceptance Model* (TAM)**

To find out the level of acceptance of the information system used can be analyzed using the TAM model. Thus, TAM is an analysis knife used to determine the attitude of user acceptance of the presence of technology. Before the TAM model emerged, there was a theory known as Theory of Reasoned Action (TRA) developed by Martin

Fishbein and Icek Ajzen (1975, 1980). Originating from previous research that began with attitude and behavior theory, the emphasis of TRA at that time was on attitude from a psychological point of view. The principle is: determine how to measure the relevant behavioral components of behavior, distinguish between beliefs or attitudes, and determine external stimuli. So that the TRA model causes the user's reaction and perception of the information system will determine the user's attitude and behavior. Then in 1986 Davis conducted a dissertation research by adapting the TRA. Then in 1989 Davis published the results of his dissertation research in the journal MIS Quarterly, thus giving rise to the TAM theory with an emphasis on perceived ease of use and usefulness that has a relationship to predict attitudes in using information systems. So in its application, the TAM model is clearly much broader than the TRA model.

TAM is one type of theory that uses a behavioral theory approach that is widely used to study the process of adopting information technology. However the name of a good model is not only predicting, but ideally should also be able to explain. Apparently, the TAM model and its indicator have indeed been tested to measure technology acceptance. Thus using TAM will be able to explain why the information system used is acceptable or not by the user [2]. TAM provides a basis for knowing the influence of external factors on the beliefs, attitudes, and goals of its users. Besides being built on a strong theoretical basis, one of the strengths of other TAM models is that it can answer the quandary questions of the many technological systems that apparently fail to be applied. This is caused by users who do not have the intention (intention) to use it. In accordance with the term TAM, that "A" stands for "Acceptance" means acceptance. So that it can be said that TAM is an analytical model to determine user behavior about technology acceptance. If you see the understanding of TAM from Wikipedia, "TAM is an information systems theory that models how users come to accept and use a technology". The point is that TAM is an information systems theory whose model is how users come to receive and use technology. Through TAM, the assumption when the user will use the new information system there are 2 factors that influence it, namely: that "A" stands for "Acceptance" means acceptance. So that it can be said that TAM is an analytical model to determine user behavior about technology acceptance. If you see the understanding of TAM from Wikipedia, "TAM is an information systems theory that models how users come to accept and use a technology". The point is that TAM is an information systems theory whose model is how users come to receive and use technology. Through TAM, the assumption when the user will use the new information system there are 2 factors that influence it, namely: that "A" stands for "Acceptance" means acceptance. So that it can be said that TAM is an analytical model to determine user behavior about technology acceptance. If you see the understanding of TAM from Wikipedia, "TAM is an information systems theory that models how users come to accept and use a technology". The point is that TAM is an information systems theory whose model is how users come to receive and use technology. Through TAM, the assumption when the user will use the new information system there are 2 factors that influence it, namely: "TAM is an information systems theory that models how users come to accept and use a technology". The point is that TAM is an information systems theory whose model is how users come to receive and use technology. Through TAM, the assumption when the user will use the new information system there are 2 factors that influence it, namely: "TAM is an information systems theory that models how users come to accept and use a technology". The point is that TAM is an information systems theory whose model is how users come to receive and use technology. Through TAM, the assumption

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when the user will use the new information system there are 2 factors that influence it, namely:

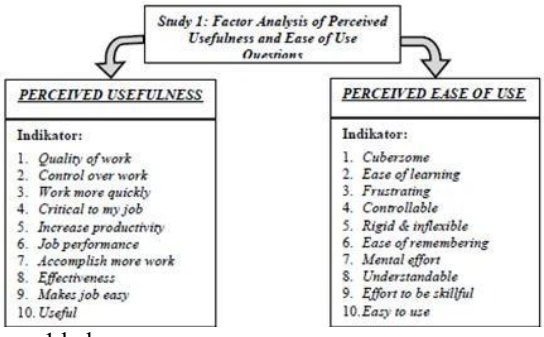
Ease of Use Perceived

In Davis (1989) stated that "*ease*"Means" freedom from difficulty or great effort ". Furthermore, "ease to use perceived" is defined as "the degree to which a person believes that using a particular system would be free of effort". If applied to information systems, the intention is that the user believes that the information system is easy to use so that it does not require much effort and will be free from difficulties. This includes ease of use of information systems in accordance with the wishes of its users. Davis (1989) results show that perceived ease can explain the reasons for users to use the system and can explain that the new system can be accepted by users [3].

Usefulness Perceived

In Davis (1989) stated that "the degree to which a person believes that using a particular system would enhance his or her job performance." It is intended that users believe that using the library information system will improve its performance. This illustrates the benefits of the system from its users relating to various aspects. So this perception of usefulness forms a trust for decision making whether to use information systems or not. The assumption is that if the user believes that the system is useful then of course he will use it, but if he does not believe that it is useful then the answer is definitely not going to use it.

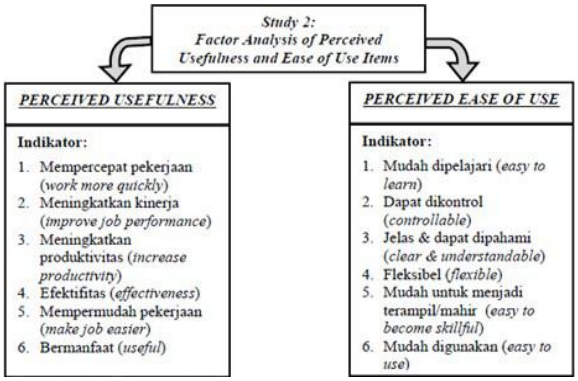
Initially Davis used as many as 14 sizes (initial scale items) as indicators in Perceived Usefulness and Perceived Ease of Use. Then start with the first study which is an initial trial / pre-
test study conducted to determine the reliability and validity and obtain results in the form of 10 kinds of indicators [4]. Regarding



what the indicators are as shown in Figure 1 below:

Picture 1 *Factor Analysis of TAM (Davis, 1989)*

Furthermore, in the second study, Davis tested the prototype or model by reducing the indicators so that they would be better and more practical. Analysis conducted at that time by calculating the correlation between (Perceived Usefulness, Perceived Ease of Use, and Self-Reported System Usage) and Regression Analysis (Effect of Perceived Usefulness and Perceived Ease of Use on Self-Reported Usage).



Picture 2 Factor Analysis of TAM (Davis, 1989)

In general, if it turns out that after conducting a study, it turns out that the ease of information system factor has no known ease, then the usefulness factor becomes invisible. Logically, how can it be useful for users if the information system is

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difficult to use or not easy to use.

The acceptance factor of a technology can come from the user or the system itself. From the user it can be cognitive aspects, individual character, personality, individual concerns about the impact of technology. Meanwhile, the system can be in the form of a computer network and the state of the computer.

According to Davis, et. al. (1989), the basic purpose of TAM is to provide an explanation of what factors determine the acceptance of technology that is able to explain the behavior of its users. The TAM model conceptualizes how users receive and use new technology. The origin of the psychological theory approach to explain the user that refers to the beliefs, attitudes, interests, and relationships of user behavior. The distinctive feature of the TAM Model is that it is simple but can predict the acceptance or use of technology [5].

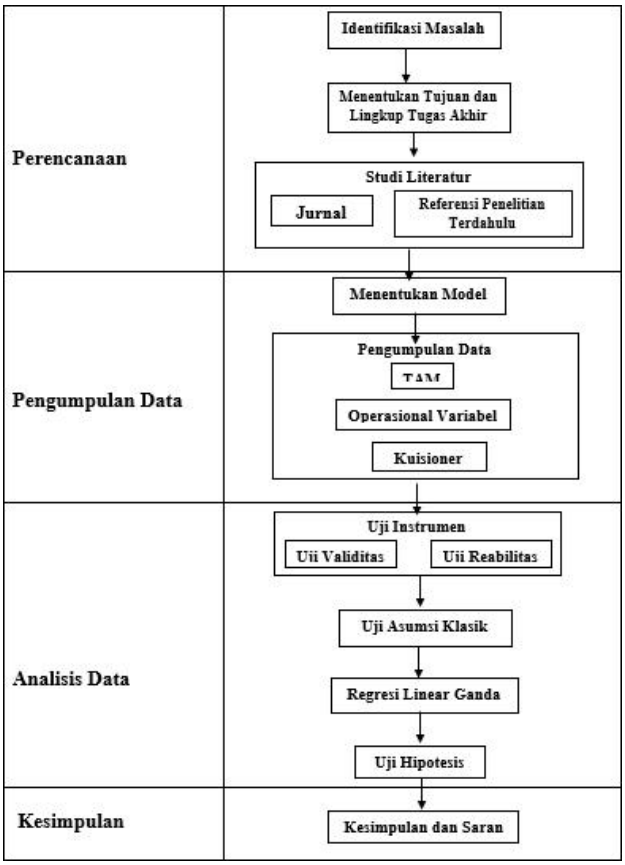
II. RESEARCH METHODS

Research plan

In general, this research was conducted using a quantitative approach and sequential research strategy in accordance with its purpose, namely knowing the acceptance of e-learning information systems through factors of end user stock system satisfaction status and examining the relationship between end user satisfaction and the factors influence it using variables and indicators of the TAM (Technology Acceptance Model) as well as conducting a survey of data with a questionnaire instrument to the research site and collecting data with guidance on distributing questionnaires to e- learning information system users, after that for data analysis carried out statistically with computer software that is related is SPSS 16.0.

III. RESEARCH STAGES

In accordance with a predetermined approach, specifically the stages of research also apply quantitative methods and techniques. Stagesresearch in this study includes:



Picture 3 Research Stages

Figure 3 contains Research Stages that are a reference are a summary of the stages of research.

The explanation of the above plot is as follows:

1. The stages of planning in the evaluation process of this information system is to identify problems from the background that has been described, determine the objectives and scope of the final task of identifying problems that have

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been predetermined and conduct a literature study on information system evaluation, e-learning information systems, TAM (Technology Acceptance Model) and previous research related to the evaluation of information systems.

2. The data collection stage begins with determining the evaluation model, the research model chosen in this study is the TAM (Technology Acceptance Model). Making a questionnaire is determined from the operational variables to describe the research variables

3. At the stage of data analysis with quantitative methods, testing the validity and reliability, the classic assumption test, multiple linear regression and hypothesis testing to find out the factors that influence the acceptance of e-learning information systems.

4. The stages of conclusions make conclusions and suggestions based on the results of the final project research.

Population and Sample

The population in this study were e-learning users at Esa Unggul Citra Raya University. Researchers determined the study population were students who used E-Learning as a learning medium. Researchers took a sample using the technique "FULLY SAMPLE" which is based on this study because the population is less than 100 respondents, the authors take 100% of the population that is as many as 45 respondents. Users of E-Learning at Esa Unggul Citra Raya University, Tangerang Regency are students of SI (Information Systems) and IT (Information Engineering) in the 2018-2019 academic year who are involved in the use of E-Learning.

Research variable

NO	Variabel	Indikator
1.	*Perceived Ease of Use* (X1)	P1. Kemudahan untuk dipelajari, P2. Kemudahan untuk mencapai tujuan, P3. Jelas dan mudah dipahami, P4. Fleksibel, P5. Bebas dari kesulitan, P6. Kemudahan penggunaan.
2.	*Perceived Usefulness* (X2)	PU1. Pekerjaan selesai lebih cepat, PU2. Menjadikan pekerjaan lebih mudah, PU3. Mengembangkan kinerja pekerjaan, PU4. Meningkatkan produktivitas, PU5. Mempertinggi efektifitas, PU6. Berguna.
3.	Acceptance Sistem Informasi e-learning (Y)	AC1. Kepuasan pengguna AC2. Kenyamanan bagi pengguan AC3. Masalah pada sistem AC4. Efektif

Research Variables This study uses 3 (three) variables that have been modified from the previous TAM research model, namely: Perceived Usefulness as the first independent variable (X1), ease (Perceived Ease of Use) as the second independent variable (X2), and acceptance e-learning information system as a related variable (Y) where according to the TAM theory significantly the usefulness variable and the convenience variable affect user acceptance in the use of e-learning information systems.

Picture 4 TAM indicator

In conducting research, research using several variables that have been determined from each of these variables, he explained again with several indicators so as to create questions that have been adapted to be questionnaires, to be submitted to respondents. About what data is needed, where the source is, what type, and what the questionnaire instruments are.

Hypothesis

In this study, the authors used three variables as previously done by researchers. These variables are Perceived Ease of Use (PEOU) and Perceived Usefulness (PU) as independent variables, while acceptance of information systems (Acceptance of SI) as the dependent variable. The constructs in this study are:

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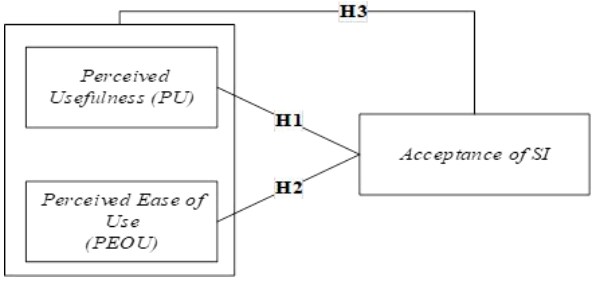

Picture 5 Hypothesis

The chart of thinking provides an illustration that there are influences from a number of factors, namely:

H0. The ease factor (perceived ease of use) does not have a positive effect on user acceptance of e-learning information systems (acceptance) at Esa Unggul Citra Raya University.

H1. The ease factor (perceived ease of use) can have a positive effect to user acceptance of e-learning information systems (acceptance) at Esa Unggul University

Citra Raya.

H0. The perceived usefulness factor does not have a positive effect on e-learning information system user acceptance at Esa Unggul Citra University Raya

H2. The factor of usefulness (perceived usefulness) can have a positive effect on e-learning information system user acceptance at Esa Unggul Citra University Raya

H0. The ease factor (perceived ease of use) and the usefulness factor (*perceived usefulness*) do not have a positive effect together user acceptance e-learning

information system at Esa Unggul Citra Raya University.

H3. The ease factor (perceived ease of use) and the usefulness factor (*perceived usefulness*) together can have a positive effect on user acceptance e-learning information

system at Esa Unggul Citra Raya University.

IV. RESULTS AND DISCUSSION

Multiple Linear Regression Analysis

In analyzing the influence *perceived ease of use* and the perceived Usefulness of acceptance of e-learning is done by using intervening analysis. The analysis is based on the value of Unstandardized Coefficient of the regression results between perceived ease of use and perceived usefulness of acceptance of e-learning.

Based on the results of the analysis using the SPSS program, the intermediate regression results are obtained *perceived ease of use* and perceived Usefulness towards acceptance of e-learning are as follows:

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	7.833	2.458		3.186	.003
	Kemudahan	.170	.121	.220	1.411	.166
	Kebermanfaatan	.066	.097	.106	.677	.502

a. Dependent Variable: Penerimaan

Picture 6 Coefficient Double Regression, Dependent Variable: Acceptance

Based on Figure 6. above, the multiple regression equation can be determined: $Y = a \text{ (constant)} + b^1X^1 + b^2X^2$, meaning $Y = 0.170\ X^1 + 0.066\ X^2$.

Based on the equation above can show that:

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1. A positive value constant of 7.833 states that if the independent variable namely the variable Perceived Ease of Use and Perceived Usefulness is considered constant, then the average Acceptance of SI is 7,833

2. Regression coefficients of all independent variables show positive values. with the value of perceived ease of use (0.170), and the value of perceived usefulness (0.066).

this means that all independent variables have a direct / positive relationship to the dependent variable.

3. Of the two independent variables used that give the dominant effect is the perceived ease of use variable with a regression coefficient of 0.170.

Hypothesis testing

H1. Perceived ease of use

Perceived ease *(Perceived ease of use)* positive effect on the acceptance of E-learning information systems.

T-test results between the Perceived Ease of Use and Acceptance of SI can be seen the results below:

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	8.518	2.226		3.826	.000
	Perceived Ease of Use	.196	.114	.253	1.715	.003

a. Dependent Variable: Acceptance SI

Picture 7 T-Test Results *Perceived Ease of Use of Acceptance of SI*

Hypothesis 1states that perceived ease of use has a positive effect on the acceptance of E-learning information systems. Viewed from the t value of the variable ease of 1.715 while the value of t table at the significance level of 0.05 and degrees of freedom (dk = 45-2 = 43) amounted to 1,680, so that t count> t table (1,715> 1,680).So Ho is rejected andThese results indicate that the convenience variable has a significant positive effect on the acceptance variable.

H2. Perceived Usefulness

The perception of usefulness has a positive effect on the acceptance of E-learning information systems.

T-test results between *Perceived Usefulness* the Acceptance of SI results can be seen below:

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	10.359	1.704		6.079	.000
	Perceived Usefullness	.108	.093	.174	1.758	.000

a. Dependent Variable: Acceptance SI

Picture 8 T-test *Perceived Usefulness of Acceptance of SI*

Hypothesis 2states that the Perceived Usefulness factor has a positive effect on the acceptance of E- learning information systems. Judging by the value of t count variable usefulness of 1,758 while the value of t table at a significance level of 0.05 and degrees of freedom (dk = 45-2 = 43) amounted to

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1,680 so that t count> t table (1,758> 1,680).So Ho is rejected andThese results indicate that the convenience variable has a significant positive effect on the acceptance variable. It can be concluded that hypothesis 2 is accepted, that is the usability factor has a positive effect on the acceptance of E- learning information system users.

H3. Perceived ease of use and Perceived Usefullness

Perceived ease (*Perceived Ease of Use*) and Perceived Usefulness have a significant / positive effect on e-learning acceptance.

In line with the results of research between the variables of usefulness and convenience, based on the F test, this study also succeeded in supporting the hypothesis which states that the perception of benefits and perceived convenience together have a significant effect on the acceptance of e- learning. This can be seen in Figure 9. below this:

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	18.928	2	9.464	1.682	.198[a]
	Residual	236.316	42	5.627		
	Total	255.244	44			

a. Predictors: (Constant), Kebermanfaatan, Kemudahan
b. Dependent Variable: Penerimaan

Picture 9 Test Results F

By looking at the calculated F value> F table (1,682> 3.21). So Ho is rejected andThe conclusion is that the perception of benefits and perceived convenience together have a significant / positive effect on the acceptance of the E-learning system.

V. CONCLUSION

Based on the results of the study as described in the previous chapter it can be concluded that:

1. The test results for the value of tcount X1 Perceived Ease of Use were 1,715 and the ttable was 1,680. These results show a comparison between tcount with ttable, namely 1715> 1,680. Then H1 is accepted or this shows that there is a significant influence between the perception of user convenience (Perceived Ease of Use) on the acceptance of e-learning information system users.
2. The test results for the tcount X2 value of the perception of user usefulness (Perceived Usefulness) is 1,158 and the ttable value of 1,680. This result shows the comparison between tcount with ttable that is 1.158> 1.680. Then H2 is accepted or this shows that there is a significant influence between the perception of the usefulness of users (Perceived Usefulness) on the acceptance of e-learning information system users.
3. The result of Fcount value is 1.682 and Ftable value is 3.21 which means Fcount> Ftable or 1.682> 3.21. So H3 is accepted or this shows that there is a significant influence between Perceived Usefulness, Perceived Ease of Use, and acceptance of e-learning information system users.

Suggestion

Based on the results of research that has been done, the researchers provide the following recommendations:

1. Future studies are expected to use methods or models other than the Technology Acceptance Model (TAM) to measure acceptance e-learning information system at Esa Unggul University.

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2. Respondents of this study only use one faculty, it is hoped that future research can develop by examining all faculties that use e-learning information systems.
3. It is expected to add attendance features so that students know if they are absent in online meetings.
4. Esa Unggul University is expected to conduct socialization to students before using e-learning.

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