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ANALYSIS OF MEASUREMENT OF READINESS AND SUCCESS OF E-LEARNING USING THE METHOD OF TECHNOLOGY READINESS AND ACCEPTANCE MODEL (TRAM) AT THE ISLAMIC UNIVERSITY OF DARUL ULUM LAMONGAN

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Abstract - E-Learning has a significant impact on the education system by discontinuing traditional learning activities and being replaced with a Distance Learning system. This study aims to determine the measurement of readiness and success of the implementation of the E-Learning system at the Islamic University of Darul Ulum Lamongan which is an important component in readiness and success and to provide recommendations for improvement based on the results of the evaluation of readiness and success carried out. The questionnaires were distributed to two groups of respondents, namely students and lecturers. Determination of the sample is 125 respondents from the student group and 116 respondents from the lecturer group. Quantitative approach method using PLS-SEM data analysis technique with SmartPLS version 3.0. Factors that influence the measurement of e-learning readiness are optimism, innovation, discomfort and insecurity. The factors that influence the measurement of the success of e-learning are perceived usefulness, perceived ease of use or ease of use, intention to use. The results of the comparison of lecturer and student tests show that there are several hypotheses that have a positive influence and some have a negative influence. There is a rejection of the hypothesis because the effect is not significant.

Keywords **:** e-learning, TRAM, technology acceptance model, technology readiness index, optimism, innovation, discomfort, insecurity, perceived ease of use, perceived usefulness, intention to use.

INTRODUCTION

The development of technology in today's information systems is so rapid and increasingly modern as the times develop, so that many agencies or organizations have used technology to support the implementation of an activity. Presentation of information effectively and efficiently in an agency or organization can be maximized with the need for an information system. To improve performance and add value to competitive advantage in business competition, synchronization of information technology with processes or strategies within an agency or organization is needed. The existence of an information system can provide many advantages in the form of timeliness, reduced document handling, and other benefits and has made information very crucial. With these benefits, agencies need to adapt to rapid technological developments and must be able to make the best use of them.

The use of technology today is very important based on the organization, especially in the era of globalization where companies are required to be more competitive (Handayani & Sudiana, 2015). Therefore, the level of utilization of information technology is very important to be used in organizations or agencies in order to provide each other with competitive competition.

Utilization of information technology is currently increasing, according to (Handayani, 2005) that the use of systems used in organizations or agencies is very important. With the use of technology which is very important, people change their mindset which leaves manual methods and forms ways to get information (Sinambela, 2011). However, in the process of developing an information system, careful planning must be carried out so that the system used is in accordance with the needs and is well integrated and the investment that must be spent is not small.

The information system used by the agency or company aims to help the organization's operations become more efficient so that it is possible for the agency or company to win the competition (Lipaj & Davidaviciene, 2013). In the academic field, information systems are a fundamental need to improve the quality of education (Usagawa & Ogata, 2015). The current information system is not only a complement but has become a major supporter in the existing business processes of an organization (Rosenberg, 2001). One example of the application of an academic information system in the education sector that has been run by various higher education institutions in Indonesia, one of which is implemented at The Islamic University of Darul Ulum Lamongan (UNISDA) is a web-based academic service system.

The Islamic University of Darul Ulum Lamongan is one of the universities that has the aim of encouraging quality education and quantity of community service as an effort to apply science, technology, art and culture in accordance with the interests of society and the nation. In addition, with the development of very modern technology, especially in information technology, UNISDA has implemented an E-Learning system that is used for teachers to manage learning materials, for example compiling syllabus, uploading material, giving assignments to students, accepting work making tests/quizzes, giving grades, monitoring activity, managing grades, interacting with students and fellow teaching teams, through discussion forums or chat, and others. On the other hand, students can use it by accessing assignments, learning materials, discussions with students and teachers, viewing conversations and learning outcomes. Another advantage is that learning using e-learning has the potential to increase equity and access to education in a country (Zhang & Nunamaker, 2003).

The development of the current system is urgently needed to measure the extent of the readiness of the E-Learning system for the success of applied learning (Moore et al., 2011). According to Lazuardi (2013), readiness in the aspect of technology or Technology Readiness is the readiness of individuals or organizations to adapt by using and utilizing existing technology in daily activities. The influence of readiness that has been carried out will determine success is that the implementation of the system does not depend on the amount of dedicated investment funds, but lies in the effectiveness of the strategies chosen and implemented by an institution (Darmawan, 2012). Success does not depend on the amount of investment sacrificed but lies in the strategy that will be applied today (Farideh et al., 2011).

Technology Acceptance Model (TAM) is the most widely used model in the paradigm (Ngai et al., 2007). TAM is one of the most powerful, basic and simple models to predict user acceptance, especially in the context of information systems. According to Venkatesh (2000), TAM also has a simple nature and will make it easier to combine other variables. According to Parasuraman (2000) Technology Readiness Index (TRI) is a model generated to determine the readiness of users to use technology. Technology Readiness refers to the tendency of users as either a driving or inhibiting factor in using new technology to achieve goals (Parasuraman & Colby, 2015).

In general, students understand the benefits of e-learning as a form of learning media that utilizes electronic media (computers, cellphones) to learn online by storing or recording the material presented (Alias & Zainuddin, 2005). Factors needed in e-learning include; awareness of all parties, willingness and ability of human resources, infrastructure and socialization (Zhao, 2003). Based on the pre-observation, the researcher found that the existing E-Learning system at UNISDA has a weakness, namely that the level of success and readiness for implementing the system used has not been measured. One of the efforts to understand measuring readiness and measuring success is by using the TAM and TRI (Technology Readiness Index) methods, where both methods have different perspectives. The TAM method was carried out by research to measure the success of the application of information systems based on the user's desire to use the information system, this method has the perspective of perceived usefulness, perceived ease of use (user convenience) and (actual system usage) the real conditions of system users. the TRI method has four variables, namely optimism (optimism), innovativeness (innovation), discomfort (inconvenience), and insecurity.

Technology is said to be successful if it can be utilized by the user as much as possible and accepted by the user (Allen et al., 2002). This research was conducted to determine the level of readiness and success of e-learning as a learning medium. This study aims to assess the success and readiness of the implementation of e-learning at UNISDA. A clear description of the facts on the conditions of implementing e-learning can help the actual situation in the field. This study also analyzes the factors that influence the success and readiness of the system at UNISDA using the TAM and TRI methods.

In this study, the combined TRI developed by (Parasuraman & Colby, 2015) is used for technology readiness while the success of the system uses the TAM developed by (Davis 1989). Researchers are interested in researching topics and objects at UNISDA, namely the E-Learning system is running well but the agency does not yet know how far it is ready to accept new technology and also do not know what factors influence this success. UNISDA also has a system to support academic progress at UNISDA has 6 consisting of Admission of New Student, Electronic Journal, Unisda Repository, Academic Information System, Digital Library System, E-Learning UNISDA. The advantages of UNISDA are Islamic cultured universities, professional teaching staff, learning with advanced facilities.

This research was conducted on the grounds that there are many learning media applied to each institution due to the times. On the topic of research and the methods used at this time are still not available there are studies that researched before, so the extent of the readiness and success of the E-Learning system is not yet known. Based on statement above, the authors are interested in conducting research at UNISDA with the topic analysis measurement of e-learning readiness and success using Technology Acceptance Models and Technology Readiness Index at the Islamic University of Darul Ulum Lamongan.

RESEARCH METHODS

Problem identification describes the scope of events related to life surrounding research at UNISDA. At this stage, it explains the problem of the object of research, namely E-Learning at UNISDA. The research data collection was carried out using a survey method, where the method was used to collect data by taking samples from the population using a questionnaire distribution research instrument. This survey method was conducted using primary data collection. The research instrument uses a survey, namely a questionnaire is made and gives statements and questions to respondents to be answered, the parties involved in this research are students and lecturers. The population of users of the E-Learning system is sampled and then using the Yamane formula. Each sampling from the sub-population uses a random sampling technique where the sample is chosen at random. while the measurement of the results of the questionnaire using a Likert scale where the answer choices include strongly disagree, disagree, neutral, agree, and strongly agree.

The making of the instrument in this study refers to seven variables which are a combination of TRI and TAM or called TRAM (Technology Readiness and Acceptance Model) where the TAM method has three variables (perceived usefulness, perceived ease of use, intention to use) and the TRI method. (optimism, innovativeness, discomfort, insecurity) has four variables. Each indicator has a question about the readiness and success of the E-Learning system.

Data analysis using Structural. Equation Model (SEM) is a multivariate analysis method that can be used to show the relationship between indicators and latent variables. Latent variables are variables that cannot be measured directly, but must be measured through several indicators. Partial Least Square (PLS) is a variant-based SEM statistical method that serves to solve multiple regression when data-specific problems occur, such as small research sample sizes, missing data (missing values) and multicollinearity. PLS-SEM has two stages of evaluation of the measurement model used, namely the measurement model (outer model) and structural model (inner model) which aims to assess the validity and reliability of a model. There is a hypothesis test to see whether the variable has a significant influence, the following is the formulation of the hypothesis:

H1: Discomfort has a positive and significant effect on perceived ease of use.
H2: Discomfort has a positive and significant effect on perceived usefulness.
H3: Innovativeness has a positive and significant effect on perceived ease of use.
H4: Innovativeness has a positive and significant effect on perceived usefulness.
H5: Insecurity has a positive and significant effect on perceived ease of use.
H6: Insecurity has a positive and significant effect on perceived usefulness.
H7: Perceived ease of use has a positive and significant effect on intention to use.
H8: Perceived usefulness has a positive and significant effect on intention to use.
H9: Optimism has a positive and significant effect on the perceived ease of use.
H10: Optimism has a positive and significant effect on perceived usefulness.

RESULTS AND DISCUSSIONS

This study uses an instrument in the form of a questionnaire and data collection was obtained from several samples that have been determined by the research using the Slovin formula. After that, the research distributed questionnaires randomly to students, lecturers and as respondents at SINAU at the Islamic University of Darul Ulum Lamongan as shown in Table 1.

Table 1
Total Research Population

Population	Amount	Total Sample
Student	1970	95
Lecturer	275	73
Total Population	2245	168

Based on the calculations performed using the Slovin formula in Table 1, the required sample size is 168 respondents with the distribution of samples namely 95 students and 73 lecturers. Dissemination of questionnaires, carried out by distributing links to respondents.

Outer Model and Loading Factor

Evaluation of the measurement model (outer model) starts from the construct validity test phase which consists of convergent validity by taking into account the value of loading factor, AVE, and discriminant validity indicated by the value of cross loading. After that, the reliability test is indicated by the composite reliability value.

Loading factor used to show the correlation between indicators and latent variables. Output Loading Factor values for all lecturers and student's indicators discomfort, innovativeness, insecurity, intention to use, optimism, perceived ease of use, and perceived usefulness have a loading factor value > 0.7 which means that all indicators are in each variable declared valid.

Average Variance Inflation Factor (AVE)

Average Variance Inflation Factor (AVE) shows the magnitude of the diversity or variance of indicators owned by the latent variable. The latent variable is said to be valid if the value of the AVE > 0.5 which means that the latent variable which is declared valid is considered to be able to explain the average of more than half of the indicators.

Table 2
AVE Value Output

Variables	Lecturer	Student
	Average Variance Extracted	
Discomfort	0.709	0.637
Innovativeness	0.676	0.583
Insecurity	0.607	0.570
Intention to use	1,000	1,000
Optimism	0.715	0.625
Perceived ease of use	0.724	0.586
Perceived usefulness	0.724	0.586

Cross Loading

Cross Loading carried out to compare the correlation of the latent variable indicator itself with other latent variable indicators. It is explained that latent variable indicators can be said to be able to predict their block size, if these indicators can meet the requirements of having a higher value than other latent variables.

The output of lectures cross loading value for the discomfort variable with three indicators is (DS 1 = 0.843; DS 2 = 0.829; DS 3 = 0.854). Innovativeness variable value with three indicators (IN 1 = 0.828; IN 2 = 0.805; IN 3 = 0.833). Insecurity variable value with four indicators (IS 1 = 0.739; IS 2 = 0.721; IS 3 = 0.838; IS 4 = 0.813). The value of the Intention To Use variable with one indicator (ITU 1 = 1,000). Optimism variable value with four indicators (OP 1 = 0.892; OP 2 = 0.778; OP 3 = 0.873; OP 4 = 0.835). Value of the perceived ease of use variable with six indicators (PEOU 1 = 0.824; PEOU 2 = 0.864; PEOU 3 = 0.865; PEOU 4 = 0.879; PEOU 5 = 0.861; PEOU 6 = 0.810). The perceived usefulness variable with five indicators (PU 1 = 0.789; PU 2 = 0.853; PU 3 = 0.890; PU 4 = 0.861; PU 5 = 0.858).

The output of student cross loading values shows the cross loading value for the discomfort variable with four indicators (DS 1 = 0.717; DS 2 = 0.794; DS 3 = 0.812; DS 4 = 0.863). Innovativeness variable value with four indicators (IN 1 = 0.748; IN 2 = 0.764; IN 3 = 0.773; IN 4 = 0.768). Insecurity variable value with four indicators (IS 1 = 0.791; IS 2 = 0.740; IS 3 = 0.730; IS 4 = 0.758). The value of the intention to use variable with one indicator (ITU 1 = 1,000). Optimism variable value with four indicators (OP 1 = 0.831; OP 2 = 0.745; OP 3 = 0.831; OP 4 = 0.750). Value of the perceived ease of use variable with five indicators (PEOU 1 = 0.822; PEOU 2 = 0.767; PEOU 3 = 0.804; PEOU 4 = 0.722; PEOU 5 = 0.708). The perceived usefulness variable with five indicators (PU 1 = 0.851; PU 2 = 0.766; PU 3 = 0.750; PU 4 = 0.726; PU 5 = 0.731).

Cronbach's Alpha

Cronbach's Alphas a measure of reliability that has a value ranging from 0-1. Cronbach's Alpha is used to measure the reliability of the indicators used in the study. A variable is declared reliable if the value of the variable is > 0.7.

Table 3
Value Output Cronbach's Alpha

Variables	Cronbach's Alpha	
	Lecturer	Student
Discomfort	0.798	0.813
Innovativeness	0.762	0.762
Insecurity	0.786	0.748
Intention to use	1,000	1,000
Optimism	0.867	0.799
Perceived ease of use	0.924	0.824
Perceived usefulness	0.904	0.824

The results of Cronbach's Alpha Lecturer's output for the Discomfort variable = 0.798; Innovativeness = 0.762; Insecurity = 0.786; Intention to use = 1,000; Optimism = 0.867; Perceived ease of use = 0.924; and Perceived usefulness = 0.904. All Cronbach's Alpha values are above 0.70, so these variables can be said to have good reliability and are declared reliable.

The results of Cronbach's Alpha Student output for the Discomfort variable = 0.813; Innovativeness = 0.762; Insecurity = 0.748; Intention to use = 1,000; Optimism = 0.799; Perceived ease of use = 0.824; and Perceived usefulness = 0.824. All Cronbach's Alpha values are above 0.70, so these variables can be said to have good reliability and are declared reliable.

Composite Reliability

The results of the composite reliability lecturer output for the Discomfort variable = 0.880; Innovativeness = 0.862; Insecurity = 0.860; Intention to use = 1,000; Optimism = 0.909; Perceived ease of use = 0.940; and Perceived usefulness = 0.929. All composite reliability values are above 0.70, so these variables can be said to have good reliability and are declared reliable.

Table 4
Value Output Composite Reliability

Variables	Lecturer	Student
	Composite Reliability	
Discomfort	0.880	0.875
Innovativeness	0.862	0.848
Insecurity	0.860	0.841
Intention to use	1,000	1,000
Optimism	0.909	0.869
Perceived ease of use	0.940	0.876
Perceived usefulness	0.929	0.876

The results of the composite student reliability output for the Discomfort variable = 0.875; Innovativeness = 0.848; Insecurity = 0.841; Intention to use = 1,000; Optimism = 0.869; Perceived ease of use = 0.876; and Perceived usefulness = 0.876. All composite reliability values are above 0.70, so these variables can be said to have good reliability and are declared reliable.

Inner Model

Inner models a structural model that links between variables. Path coefficient to see the level of influence between variables. This stage can be done by looking at the criteria for the R-Square value and the significance value.

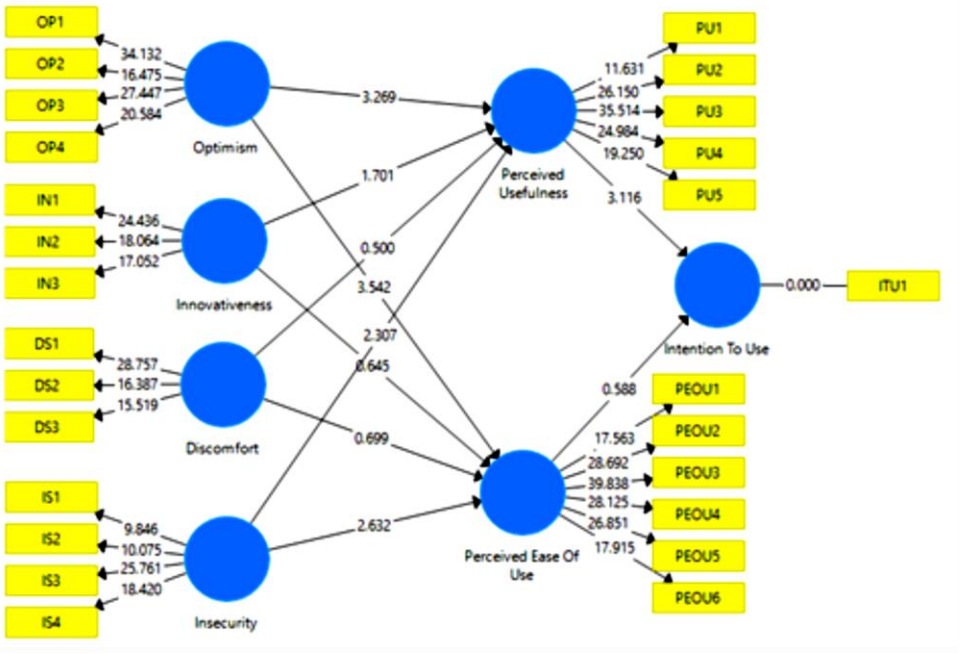

Figure 1
Lecturer Model Inner Measurement

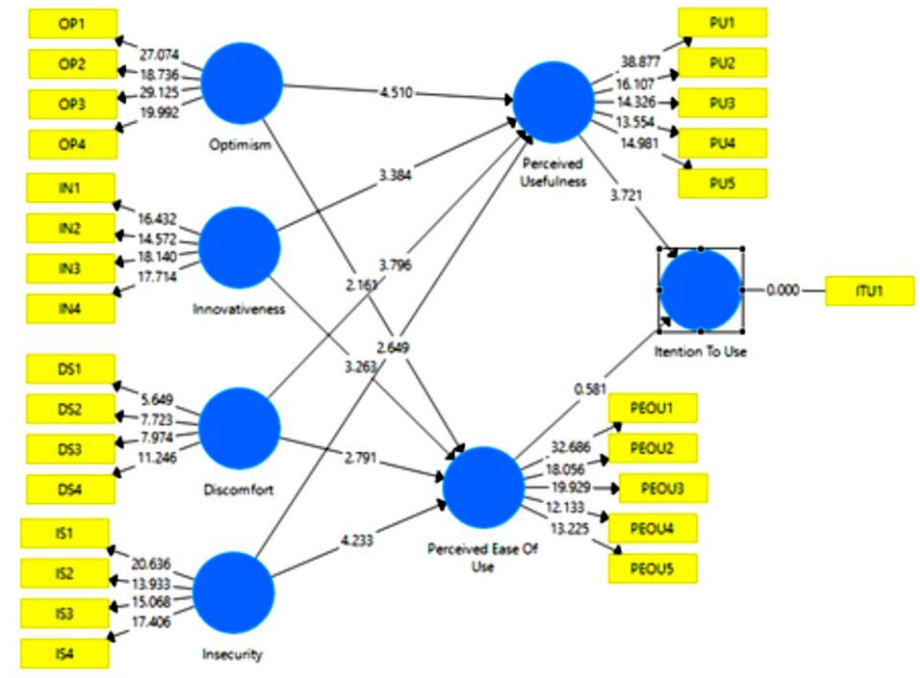

Figure 2
Student Model Inner Measurement

R-Square

R-Square is the value used to measure the rate of change of the independent variable on the dependent variable. The purpose of the r-square value is to see the correlation between latent variables. The rule of thumb of the r-square value is 0.75 indicating the strong category, 0.50 indicating the moderate category, and 0.25 including the weak category.

Table 5
Value Output R-Square

Variables	Lecturer	Student
	R Square	
Intention to use	0.550	0.725
Perceived ease of use	0.813	0.844
Perceived usefulness	0.761	0.915

F-Square

F-Square used to determine the effect of the latent variable. The recommended value of the F-Square criteria is 0.02 indicating that it has a weak influence, 0.15 moderate and 0.35 is included in the strong category.

Table 6
Lecturer's F-Square Score

Variables	Lecturer			Student		
	Ease of use	Usefulness	Intention to use	Ease of use	Usefulness	Intention to use
Discomfort	0.012	0.007		0.096	0.156	
Innovativeness	0.011	0.052		0.157	0.184	
Insecurity	0.276	0.257		0.358	0.124	
Optimism	0.374	0.218		0.086	0.330	
Perceived ease of use			0.006			0.004
Perceived usefulness			0.150			0.181

Q-Square

Q– Square aims to see the effect of the model on the measurement of the observation of endogenous latent variables. The value of Q-square is obtained by using the blindfolding procedure. The value of Q – Square > 0 explains that the model lacks Predictive Relevance. The magnitude of the value of Q^2 has a value range of $0 < Q^2. <1$, which means that the closer the Q^2 value is to 1, the model can be said to be very good.

Table 7
Q Value – Square

Variables	Q^2	
	Lecturer	Student
Perceived ease of use	0.572	0.482
Perceived usefulness	0.525	0.485
Intention to use	0.493	0.698

Goodness of Fit (GoF)

Goodness of Fit (GoF) aims to validate the overall structural testing the feasibility of a model used the Goodness of Fit (GoF) measurement. GoF has a range of values, namely: 0.1 (small GoF), 0.25 (moderate GoF), and 0.36 (large GoF). The following is the formula for calculating Goodness of Fit (GoF) as follows:

a. Goodness of Fit (GoF) Lecturer

$$\text{GoF} = \sqrt{\overline{\text{AVE}} \text{x} \overline{\text{R}^2}}$$
$$\text{GoF} = \sqrt{143{,}450 \text{x} 0{,}8345}$$
$$\text{GoF} = 10{,}941161$$

b. Goodness of Fit (GoF) Student

$$\text{GoF} = \sqrt{\overline{\text{AVE}} \text{x} \overline{\text{R}^2}}$$
$$\text{GoF} = \sqrt{143{,}369 \text{x} 0{,}9025}$$
$$\text{GoF} = 11{,}108129$$

$\overline{\text{AVE}}$ = Average value AVE
$\overline{\text{R}^2}$ = Average value R^2

Hypothesis testing

The truth of the hypothesis that has been made to be proven by testing the hypothesis. Hypothesis test can be known through the value of path coefficients, t-statistics and P-values.

Table 8
Lecturer Hypothesis Test

Hypothesis	Path Coefficients	t-statistics	P-values	Influence
H1 : DS→PEOU	0.112	1.145	0.253	Positive influence is not significant
H2 : DS→ PU	-0.019	0.156	0.876	Negative influence is not significant
H3 : IN→ PEOU	-0.023	0.204	0.839	Negative effect is not significant
H4 : IN→ PU	0.059	0.527	0.599	Positive influence is not significant
H5 : IS→ PEOU	0.305	2,402	0.017	Significant Positive Effect
H6 : IS→ PU	0.315	2.218	0.027	Significant Positive Effect
H7 : PEOU→ THAT	0.239	2,302	0.022	Significant Positive Effect
H8 : PU→ THAT	0.322	2.498	0.013	Significant Positive Effect
H9 : OP→ PEOU	0.453	3,671	0.000	Significant Positive Effect
H10 : OP→ PU	0.385	2,948	0.003	Significant Positive Effect

In the group of lecturers, it was found that there were six hypotheses that were proven to be true. There are four hypotheses that do not prove the truth of the hypothesis because they have no role significance. In the student group, eight hypotheses were found to be true and two hypotheses were not proven true.

Table 9
Student Hypothesis Test

Hypothesis	Path Coefficients	t-statistics	P-values	Influence
H1 : DS→PEOU	0.065	1,747	0.081	Positive influence is not significant
H2 : DS→ PU	0.088	2,953	0.003	Significant Positive Effect
H3 : IN→ PEOU	0.222	2,442	0.015	Significant Positive Effect
H4 : IN→ PU	0.231	2.865	0.004	Significant Positive Effect
H5 : IS→ PEOU	0.393	4,517	0.000	Significant Positive Effect
H6 : IS→ PU	0.166	2.035	0.042	Significant Positive Effect
H7 : PEOU→ THAT	0.300	4.327	0.000	Significant Positive Effect
H8 : PU→ THAT	0.367	7.596	0.000	Significant Positive Effect
H9 : OP→ PEOU	0.123	1,886	0.060	Positive influence is not significant
H10 : OP→ PU	0.293	5.790	0.000	Significant Positive Effect

Comparison of Lecturer and Student Results

There are differences in the conditions of the two sample groups in this study. To compare two groups of respondents, namely lecturers and students, it is shown in the following table.

Table 10
Lecturer and Student Comparison Results

Lecturer	Student
Distribution of data get 115 respondents	Distribution of data to get 125 respondents
The indicator becomes 26	The indicator becomes 27
Getting Sample 73	Get sample 95
Valid results for Loading Factor	Valid results for Loading Factor
AVE results are valid because > 50	AVE results are valid because > 50
The results of Cronbach's omission and composite reliability tests on the variables are declared valid	The results of Cronbach's omission and composite reliability tests on the variables are declared valid
The results of the R-Square state the strong category	The results of the R-Square state the strong category
The results of the F-Square in the weak category are 5 while the strong category is 5	The results of the F-Square in the weak category are 3 while the strong category is 7
Q-Square results have *Predictive Relevance*	Q-Square results have *Predictive Relevance*
The result of GoF is 0.941161	GoF's result is 11.108129
The results of the hypothesis are 6 significant positive and 4 positive but not significant.	The results of the hypothesis are 8 positive significant and there are 2 positive but not significant.

Discussion

The results of data analysis have found several things. The research findings are explained as follows with the conditions of acceptance or rejection of the research hypothesis.

1. In the lecturer group, the discomfort variable has no significant positive effect on perceived ease of use as indicated by a positive path coefficient of 0.112 and a t-statistic value of 1.145 < 1.96 or p-values, which is 0.253 > 0.05 which means that the discomfort variable has an insignificant positive effect on perceived ease of use so that the first hypothesis is not proven. Respondents stated that the refusal proved that users tend to ignore the discomfort they feel when using the e-learning system and still think that the e-learning system is easy to use because it is fast for academic and teaching activities. In the student group, the discomfort variable has an insignificant positive effect on perceived ease of use as indicated by a positive path coefficient of 0.065 and a t-statistic value of 1.747 < 1.96 or p-values, which is 0.081 > 0.05 which means that the discomfort variable has no significant positive effect on perceived ease of use so that the hypothesis is not proven. This refusal proves that users of the e-learning system tend to ignore the discomfort they feel when using the e-learning system and maintain the view that the e-learning system is easy to use because it is fast and efficient (Arbaugh, 2001).
2. In the lecturer group, the discomfort variable has a positive but not significant effect on perceived usefulness as indicated by a positive path coefficient of 0.019 and a t-statistic value of 0.156 < 1.96 or p-values, which is 0.876 > 0.05 which means means that the discomfort variable has no significant effect on perceived usefulness so that the hypothesis is not proven. In this study, respondents stated that the refusal proves that users tend to ignore the discomfort they feel when using the e-Learning system and prefer to keep using it because the perceived benefits are greater such as being efficient and practical because the e-learning system is used for various academic activities. In the student group, the discomfort variable has a significant positive effect on perceived usefulness as indicated by a positive path coefficient of 0.088 and a t-statistic value of 2.953 > 1.96 or p-values, which is 0.003 < 0.05 which means that the discomfort variable significant positive effect on perceived usefulness so that the hypothesis is proven correct. Acceptance of the hypothesis proves that the use of e-learning systems has an attitude of discomfort that arises when using technology has shown that the perception of the benefits of use will certainly be influenced by the perceived system (Venkatesh, 2000; Halizah et al., 2022).
3. In the group of lecturers, the variable innovativeness has no significant positive effect on perceived ease of use as indicated by a positive path coefficient of 0.023 and a t-statistic value of 0.204 < 1.96 or p-values, which is 0.839 > 0.05. which means that the innovativeness variable has no insignificant effect on perceived ease of use so that the hypothesis is not proven. In the student group, the innovativeness variable has a significant positive effect on perceived ease of use as indicated by a positive path coefficient of 0.222 and a t-statistic value of 2.442 > 1.96 or p-values, which is 0.015 < 0.05 which means that Innovativeness variable has a significant positive effect on perceived ease of use so that the hypothesis is proven. Support for this hypothesis shows that the high level of individual innovation that can be seen from the user's knowledge of the technology without the help of others and the lack of obstacles when using the e-learning system proves that it is considered easy to use for learning (Mardikaningsih & Darmawan, 2021).
4. In the group of lecturers, the variable innovativeness has no significant positive effect on perceived usefulness which is indicated by a positive path coefficient of 0.059 and a t-statistic value of 0.527 < 1.96 or p-values, which is 0.599 > 0.05 which means that the variable innovativeness has no significant positive effect on perceived usefulness so that the hypothesis is not proven. In the student group, the innovativeness variable has a significant positive effect on perceived usefulness as indicated by a positive path coefficient of 0.231 and a t-statistic value of 2.865 > 1.96 or p-values, which is 0.004 < 0.05 which means that the variable innovativeness significant positive effect on perceived usefulness so that the hypothesis is proven. Support for the hypothesis shows that the high level of individual innovation that can be seen from the user's knowledge of the technology without the help of others and the lack of obstacles when using the e-learning system proves that it is considered useful for learning. Technology should bring better utilization of manual systems. This is a must for the existence of an information system (Mardikaningsih et al., 2015).
5. In the lecturer group, the insecurity variable has a significant positive effect on perceived ease of use as indicated by a positive path coefficient of 0.305 and a t-statistic value of 2.402 > 1.96 or p-values, which is 0.017 < 0.05 which means that the insecurity variable has a significant positive effect on perceived ease of use so that the hypothesis is proven correct. In the student group, the insecurity variable has a significant positive effect on perceived ease of use as indicated by a positive path coefficient of 0.393 and a t-statistic value of 4.517 > 1.96 or p-values, which is 0.000 < 0.05 which means that insecurity variable has a significant positive effect on perceived ease of use so that the hypothesis is proven. Acceptance of the hypothesis proves that the use of e-learning systems has an insecure attitude that arises when using technology indicates that the perception of ease of use will certainly be influenced by the perceived system. Internal control is needed in this case (Arifin & Sinambela, 2021).
6. In the group of lecturers, the insecurity variable has a significant positive effect on perceived usefulness as indicated by a positive path coefficient of 0.315 and a t-statistic value of 2.218 > 1.96 or p-values, which is 0.027 < 0.05 which means that the insecurity variable has a significant positive effect on perceived usefulness so that the hypothesis is proven correct. In the student group, the insecurity variable has a significant positive effect on perceived usefulness as indicated by a positive path coefficient of 0.166 and a t-statistic value of 2.035 > 1.96 or p-values, which is 0.042 < 0.05 which means that the insecurity variable significant positive effect on perceived usefulness so that the hypothesis is proven. Acceptance of the hypothesis proves that the safety factor is important for users and that is one of the benefits of operating the system with a secure system. Security can also be reviewed through a well-designed control system (Mardikaningsih & Darmawan, 2020).

7. In the lecturer group, the intention to use variable has a significant positive effect on perceived ease of use as indicated by a positive path coefficient of 0.239 and a t-statistic value of 2.302 > 1.96 or p-values, which is 0.022 < 0, 05 which means that the intention to use variable has a significant positive effect on perceived ease of use so that the hypothesis is proven correct. In the student group, the intention to use variable has a significant positive effect on perceived ease of use as indicated by a positive path coefficient of 0.300 and a t-statistic value of 4.327 > 1.96 or p-values, which is 0.000 < 0.05 which means that the insecurity variable has a significant positive effect on perceived ease of use so that the hypothesis is proven. Support for the hypothesis shows that users have felt the ease when using the e-learning system so that it can affect interest while increasing the use of e-learning systems in the future (Jogiyanto, 2007).
8. In the group of lecturers, the intention to use variable has a significant positive effect on perceived usefulness as indicated by a positive path coefficient of 0.322 and a t-statistic value of 2.498 > 1.96 or p-values, which is 0.013 < 0.05 which means that the intention to use variable has a significant positive effect on perceived usefulness so that the hypothesis is proven correct. In the student group, the intention to use variable has a significant positive effect on perceived usefulness as indicated by a positive path coefficient of 0.367 and a t-statistic value of 7.596 > 1.291 or p-values, which is 0.000 < 0.05 which means that the insecurity variable significant positive effect on perceived usefulness so that the hypothesis is proven correct. Support for this hypothesis indicates that users who are interested in the system perceive the system will provide benefits to their interests in the future (Venkatesh et al., 2003).
9. In the group of lecturers, the optimism variable has a significant positive effect on perceived ease of use as indicated by a positive path coefficient of 0.453 and a t-statistic value of 3.671 > 1.96 or p-values, which is 0.000 < 0.05 which means that the optimism variable has a significant positive effect on perceived ease of use so that the hypothesis is proven correct. In the student group, the optimism variable has no significant positive effect on perceived ease of use. This is indicated by a positive path coefficient of 0.123 and a t-statistic value of 1.886 < 1.96 or p-values, which is 0.060 > 0.05 which means that the optimism variable has no significant positive effect on perceived ease of use so that the hypothesis is not proven. This refusal proves that the users of the e-learning system are determined by an effective system design and produces an e-learning system that is easy to use (Teo, 2011).
10. In the lecturer group, the optimism variable has a significant positive effect on perceived usefulness as indicated by a positive path coefficient of 0.385 and a t-statistic value of 2.948 > 1.96 or p-values, which is 0.003 < 0.05 which means that Optimism variable has a significant positive effect on perceived usefulness so that the hypothesis is proven correct. In the student group, the optimism variable has a significant positive effect on perceived usefulness. This is indicated by a positive path coefficient of 0.293 and a t-statistic value of 5.790 > 1.96 or p-values, which is 0.000 < 0.05 which means that the optimism variable has a significant positive effect on perceived usefulness so that the hypothesis is proven correct. Acceptance of the hypothesis proves that users of the e-learning system have an optimistic attitude and a positive view that the e-learning system provides benefits in academic activities such as teaching and can improve the quality of teaching more quickly and efficiently (Aparicio et al., 2016).

CONCLUSIONS

Based on the results of the analysis that has been done there are several things that can be concluded with the findings obtained. Factors that influence the measurement of e-learning readiness are optimism, innovation, discomfort and insecurity. The factors that influence the measurement of the success of e-learning are perceived usefulness, perceived ease of use or ease of use, intention to use. The results of the comparison of lecturer and student tests show that there are several hypotheses that have a positive influence and some have a negative influence. There is a rejection of the hypothesis because of the insignificant effect.

This research has some limitations. Further research can collect data using instruments such as distributing questionnaires and interviews with a wider scope so that a clear picture of the relationship between variables can be obtained. The number of samples taken can be increased not only on the UNISDA campus but can be taken from several universities that have just used a website-based academic information system. Data analysis can be done using other statistical test tools such as SPSS, AMOS and Lisrel so that all the data generated can be significant. In further research by adding several variables of personal innovativeness in the domain of information technology in the realm of information technology to the research model so as to gain new knowledge from the results of the existing analysis.

REFERENCES

Abdillah, W. (2017). Metode Penelitian Terpadu Sistem Informasi. ANDI, Yogyakarta.

Alias, N. & Zainuddin, M. (2005). Innovation for better teaching and learning: Adopting the earning management system. Malaysian Online Journal of Instructional Technology, 2(2), 27-40.

Allen, M., Bourhis, J., Burrell, N., & Mabry, E. (2002). Comparing Student Satisfaction With Distance Education to Traditional Classroomsin Higher Education: A Meta-Analysis. American Journal of Distance Education, 16(2), 83-97.

Aparicio, M., Bacao, F. & Oliveira, T. (2016). An E-Learning Theoretical Framework, Journal of Educational Technology Systems, 19(1), 292–307.

Arbaugh, J. B. (2001). How Instructor Immediacy Behaviours Affect Student Satisfaction and Learning in Web-Based Courses. Business Communication Quarterly, 64(2), 42-54.

Areti, V. (2006). Satisfying distance education students of the Hellenic Open University. E-mentor, 2 (14), 1-12.
Arifin, S. & E. A. Sinambela. (2021). Studi tentang Kinerja Karyawan ditinjau dari Keberadaan Sistem Informasi Akuntansi dan Pengendalian Internal, Jurnal Akuntansi Realible, 1(1), 58-70.
Darmawan, D. (2012). Manajemen Informasi, Metromedia, Surabaya.
Davis, F.D. (1989). Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. MIS quarterly, 13, 319-340. https://doi.org/10.2307/249008.
Ermawati, A. (2018). Pengaruh Brand Image Dan Brand Trust Terhadap Purchase Decision Produk United. Jurnal Agora, 6(2), 287097.
Halizah, S. N., E. Retnowati, D. Darmawan, R. K. Khayru, & F. Issalillah. (2022). Determinants of Customer Trust: A Study on Safety, Ease-of-use, and Perceived Usefulness of Herbal Products of Kuku Bima Ener-G, Journal of Trends Economics and Accounting Research, 2(4), 86-92.
Farideh, H., M. Maryam, R. Maryam & J. Mehdi. (2011). Information Technology in Education. *Procedia Computer Science*, 3, 369-375.
Handayani, T., & Sudiana, S. (2015). Analisis Penerapan Model UTATUT (Unified Theory of Acceptance and Use of Technology) Terhadap Perilaku Pengguna Sistem Informasi. Semnas Re TII ke-10 2015.
Handayani. (2005) . Analisis Faktor-Faktor Yang Mempengaruhi Minat Pemanfaatan Sistem Informasi dan Penggunaan Sistem Informasi. Universitas Diponegoro Semarang.
Jogiyanto. (2007). Sistem Informasi Keperilakuan. Penerbit ANDI. Yogyakarta
Lazuardi, A. (2013). Tingkat Kesiapan (Readiness) Pengapdosian Teknologi Informasi. Karya Akhir Universitas Indonesia 2013.
Lin, C.H., Shih, H.Y, & Sher, P.J. (2007). Integrating technology readiness into technology acceptance: The TRAM model. Psychology and Marketing, 3(3), 641-657.
Lipaj, D., & Davidaviciene, V. (2013). Information System, 5(1), 38-45. https://doi.org/103846/mla.2013.06
Mardikaningsih, R., A. Gunawan, D. Darmawan & A. Karina. (2015). Manajemen, Teknologi, dan Bisnis, Addar Press, Jakarta.
Mardikaningsih, R. & D Darmawan. (2020). Sistem Pengendalian Mutu. Metromedia, Surabaya.
Mardikaningsih, R. & D. Darmawan. (2021). Peranan Sistem Informasi Persediaan terhadap Persepsi Kemudahan Penggunaan, Kegunaan Yang Dirasakan, dan Kepuasan Pengunjung Toko Buku. Realible Accounting Journal, 1(1), 43-57.
Moore, J. L., Dickson-Deane, C. & Galyen, K. (2011). E-Learning, Online Learning, and Distance Learning Environments: Are They the Same? The Internet and Higher Education, 14(2), 129–135.
Ngai, E. W., Poon, J. K. L. & Chan, Y. H. (2007). Empirical examination of the adoption of WebCT using TAM. Computers & Education, 48(2), 250–267.
Noesgaard, S. S., & Herngreen, R. (2015). The effectiveness ofe-learning: An explorative and integrative review of thedefinitions, methodologies and factors that promote e-Learningeffectiveness. Electronic Journal of E-Learning, 13(4), 278-290.
Parasuraman, A. (2000). Index (TRI) A Multiple-item Scale to Embrace New Technologies. Journal of Service Research, 2.
Parasuraman, A. & C. L. Colby. (2015). An Updated and Streamlined Technology Readiness Index: TRI 2.0. Journal of service Research, 18(1), 59-74. https://doi.org/10.1177/1094670514539730
Parasuraman, A., dan Colby, C.L. (2000). Technology Readiness Index (TRI) a multiple-item scale to measure readiness to embrace new technologies. Journal of Service Research.
Rosenberg, M. J. (2001). e-Learning: strategies for delivering knowledgein the digital age, McGraw-Hill, New York.
Sinambela, E. A. & D. Darmawan. (2011). Analisis Dampak Penerapan Sistem Informasi Akuntansi terhadap Kualitas Laporan Keuangan melalui Sistem Pengendalian Internal Sebagai Variabel Intervening, Jurnal Ekonomi dan Bisnis, 1(1), 18-29.
Sun, P. C., Tsai, R. J., Finger, G., Chen, Y. Y., Yeh, D. (2008). Whatdrives a successful e-learning? An empirical investigation of the criticalfactors influencing learner satisfaction. Computer & Education, 50, 1183-1202.
Suryani, & Hendryadi. (2015). Metode Riset Kuantitatif Teori dan Aplikasi pada Penelitian Bidang Manajemen dan Ekonomi Islam. Prenadamedia Group, Jakarta.
Teo, T. (2011). Factors influencing teachers' intention to use technology: Model development and test. Computers & Education, 57(4), 2432–2440.
Usagawa, T. & Ogata, K. (2015). Potential of E-Learning for Enhancing Graduate and Undergraduate Education, IPTEK Journal of Proceeding Series (1), KS2-3-KS2-6.
van Raaij, Erik M. & Schepers, Jeroen J.L. (2008). The Acceptance and Use of a Virtual Learning Environment in China. Computers & Education, 50, 838–852.
Venkatesh, V. (2000). Determinants of Perceived Ease of Use: Integrating Control, Instrinsic Motivation, and Emotion into the Technology Acceptance Model, 19(7), 342-365.
Venkatesh, V., Morris, M. G., Davis, G. B. & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. MIS Quarterly, 27, 425–478.
Walezuch, R., Lemmink, J., & Streukens, S. (2007). The effect of service employess'technology readiness on technology acceptance. Information and Management, 44(2), 206-215. https://doi.org/10.1016/j.im.2006.12.005
Wang, Y., Wang, H. & Shee, D. (2007). Measuring e-learning systems success in an organizational context: Scale development and validation. A Computers in Human Behavior, 23, 1792–1808.
Yusup, F. (2018). Uji Validitas dan Reliabilitas Instrumen Penelitian Kuantitatif. Jurnal Tarbiyah : Jurnal Ilmiah Kependidikan, 7(1), 17–23. https://doi.org/10.18592/tarbiyah.v7i1.2100.
Zhang, D., & Nunamaker, J. F. (2003). Poweringe-learning in the new millennium: an overview of e-learning and enabling technology. Information Systems Frontiers, 5(2), 207–218.
Zhao, F. (2003). Enhancing the quality of online higher education throughmeasurement Quality Assurance in Education, 11(4), 214-221.