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Judul : **E-Learning System Success Adoption in Indonesia Higher Education**
Jurnal : **Academic Journal of Interdisciplinary Studies**
Reputasi : **Terindeks Scopus Q3**

No	Item	Tanggal	Halaman
1	Submission Letter	10 Oktober 2021	3
2	Respond submission paper	14 Oktober 2021	15
3	Paper Review Results	18 November 2021	17
4	Revision Paper, Payment for Publication	29 November 2021	22
5	Letter of Acceptance	30 November 2021	36
6	Proofreading: AJIS January 2022	28 Desember 2021	39
7	Publish Online	3 Januari 2022	56

Demikian surat keterangan ini dibuat untuk kepentingan kelengkapan Pengusulan Guru Besar.

Yogyakarta, 28 April 2023

Ketua,

Prof. Dr. Mohamad Irhas Effendi, M.Si.
NIP 196212191988031001

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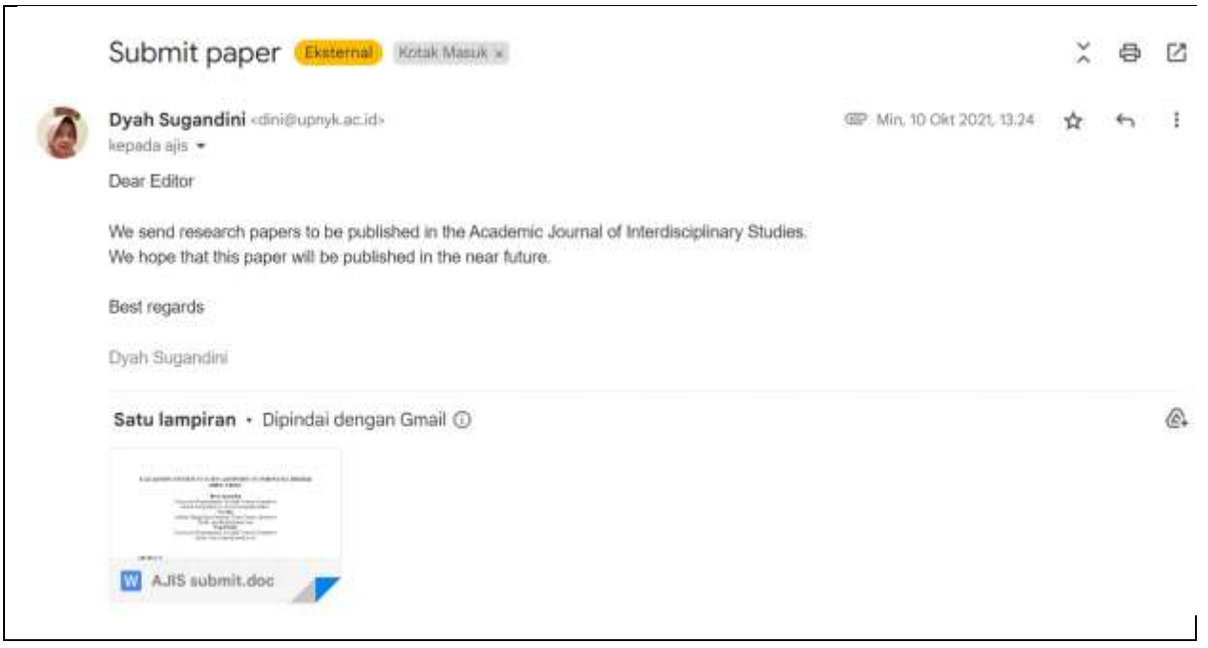
SUBMISSION LETTER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E-LEARNING SYSTEM SUCCESS ADOPTION IN INDONESIA HIGHER EDUCATION

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ABSTRACT

This study aims to analyze the success of the e-learning system, which is influenced by learner computer anxiety, social influence, perceived usefulness, and usage satisfaction. This study uses a survey, with the respondents being students at universities in the Special Region of Yogyakarta, Indonesia. The number of respondents is 250 people. The sampling technique is purposive sampling, and the data analysis method uses a structural model, namely PLS-SEM. The results showed that the e-learning adoption success model was accepted. However, this study's effect of perceived usefulness and learner computer anxiety on adoption is not significant. This research has a novelty related to adopting innovations, namely e-learning in forced conditions, and there is no choice but online learning, which must be done during the Covid-19 pandemic. This research contributes to the support of the technology adoption theory by users in situations of involuntary adoption.

Keywords: Learner anxiety, social influence, perceived usefulness, satisfaction, and e-learning success.

JEL Classification: A200, O330

INTRODUCTION

The evolution of information technology has encouraged improvements in various fields, including education. Online schools enable education to increase and promote e-learning adoption. E-learning integrates education and technology, which has become a vital learning requirement (Al-Fraihat et al., 2020). The E-Learning paradigm is a mode of distance education. It has proven to be the only avenue that allows the continuation of learning under the global lockdown conditions due to the COVID-19 pandemic. Many studies in e-learning have proposed several topics about the critical success factors of e-learning, such as system quality, information quality, service quality, satisfaction, and usability. The need for a comprehensive e-learning success model should be made at different levels of success (Nikolić et al., 2018). The Covid19 pandemic has forced many Indonesian universities to use online learning by utilizing e-learning systems and various other media. The reduction in face-to-face classes has caused e-learning to become a much-needed technology in low-down conditions and the Enforcement of Restrictions on Community Activities (Sugandini et al., 2019). Many universities use social media to facilitate teaching and learning activities and online learning-based learning management systems (Mulyono et al., 2021). This study seeks to analyze the success of e-learning adoption from the user or student side in Indonesia. Initial research conducted by Sugandini shows that many students are resistant to using e-learning systems or online learning. Many students feel bored because they always have to interact and teach without direct physical interaction. Another research on e-learning in Indonesia has been conducted Indonesia based on TAM. This study was conducted by Sukendro et al. (2020), who found that TAM has succeeded in explaining the factors that predict the use of e-learning among students.

There is a significant relationship between the convenience factor and perceived ease of use. However, the association of perceived benefits to attitudes was not significant. This research is

critical because: (1) Research on the factors that influence the success of e-learning can be used as a reference for universities to manage their e-learning. (2) this study observes the inner side of the user, which in most studies has not been done much. (3) This study analyzes user satisfaction as one of the factors influencing the success of e-learning. Because e-learning is a new compulsion that must be implemented immediately, user satisfaction becomes an important thing that needs to be analyzed (Yawson and Yamoah 2020). This study analyzes the e-learning success model, influenced by user satisfaction, perceived usefulness (P.U.), learner computer anxiety, and social influence. The study was conducted on students in the Special Region of Yogyakarta, Indonesia, who are still actively participating in lectures.

LITERATURE REVIEW

E-learning success

E-learning during the COVID-19 pandemic has excellent potential in supporting online learning. In Indonesia, the prospect of e-learning has been utilized by all universities. University managers and the government have sought many things to make this e-learning system a success. The incredible attention to the success of e-learning has led to a lot of research on this topic. On the other hand, the success of the e-learning system is also not accompanied by the risk of implementing e-learning. Many students choose to drop out of school because of the lack of funds to participate in online learning. Students also decided not to continue their studies because they felt bored and disappointed with the e-learning provided by the government and universities. These phenomena turned out to be interesting to study. Several previous researchers have studied several factors causing the success of e-learning. Usage satisfaction is one of the causes of successful e-learning adoption **(**Cidral et al., 2020). Other researchers also show that the success of e-learning can be driven by the use of an e-learning system, perceived usefulness, learner computer anxiety, social influence, system quality, and learner quality (Yawson and Yamoah 2020).

Learner computer anxiety and usage satisfaction

Learner computer anxiety concerns computer technology anxiety and hurts satisfaction. Learner computer anxiety prevents e-learning success (Naveed et al., 2021). Individuals who have a more positive attitude towards technology will better adapt to technology and reduce anxiety levels (Cidral et al., 2020). Online learning anxiety and worry are triggered by uncertainty, so that it is negatively correlated with learning effectiveness. Learner computer anxiety inhibits students' disposition to learn online. Feelings of anxiety can also reduce students' motivation and self-efficacy (Sun and Rueda 2012). Student anxiety is often associated with various factors: lack of clear instructions and feedback, inability to manage workload, feelings of isolation, lack of self-confidence, and negative past experiences (Abdous, 2019). Students who are not prepared for online lectures, especially those with minimal confidence in computer technology, often show different levels of online learning anxiety.

On the other hand, students with high confidence in computer technology tend to be more adaptable to online learning. Students who have a good perception of computer technology do not see the negative side of the online learning experience. Unprepared online teachers also show feelings of sadness and anxiety with this online technology. So, online technology affects their self-efficacy and ability to teach. Self-efficacy develops quality learning (Naveed et al., 2021). The research of Ouajdouni et al. (2021) shows that social and public works significantly influence the use of e-learning systems. On the other hand, fear of computer anxiety affects satisfaction with e-learning.

H1: Learner computer anxiety has an impact on usage satisfaction

Social Influence and usage satisfaction

Social influence is an essential aspect of the UTAUT model. Social impact is taking into account the opinions of others when using new technologies or innovations. This social impact motivates a person to discover the various factors of e-learning and increase their satisfaction with it. Social support and influence can affect user satisfaction (Nikolić et al., 2018). Pornsakulvanich (2017)

also investigated the impact of social influence on user satisfaction. The study carried out by 460 respondents aged 18 to 25 from these three social network platforms: Facebook, Instagram, and Line. In particular, social influence has a positive effect on support satisfaction and overall support frequency. The findings from Li et al. (2015) study also show that social support is positively related to user satisfaction on Facebook users.

H2: Social influence has an impact on usage satisfaction

Perceived Usefulness and e-learning system success

Davis' Technology Adoption Model (TAM) has become the most widely used theory for measuring the success of new technologies in terms of technology adoption and use (Sukendro et al. 2020). TAM is derived from the Theory of Reasoned Action (TRA) and has become part of social psychology theory. The TAM model shows that when users adopt new technology, they will be heavily influenced by internal and external factors. External factors include social factors, cultural factors, and political factors. Internal factors include perceived usefulness and perceived ease of use. Perceived usefulness and PEOU have a positive relationship to user satisfaction and successful adoption of three social networking sites (Pornsakulvanich, 2017). Testing the relationship between P.U. on user satisfaction has been carried out by (Hämäläinen et al., 2021) on 15-year-old Finnish adolescents regarding universal web-based acceptance. In his study, it was found that 82% of teenagers were quite active to very active in using the Youth Compass. The results showed that the P.U. perceived by the respondents was relatively high, so it impacted the perceived satisfaction of the program. Perceived use of the system is an important measure that affects the happiness and success of e-learning adoption (Ramadiani et al., 2017). Testing the relationship between P.U. on satisfaction and successful adoption of e-learning was carried out by (Nugroho et al., 2019). The consequence of his study is that satisfaction has an influential mediating role in the relationship between perceived usefulness and continued intention in e-learning adoption. Decision-making in adopting information systems such as e-learning needs to recollect numerous factors, including user satisfaction. This study provides tips and proof that user satisfaction is quite significant in influencing the continuity of the use of e-learning

H3: Perceived Usefulness affects usage satisfaction

H4: Perceived Usefulness affects e-learning system success

Usage satisfaction and e-learning system success

Student satisfaction for usage e-learning has a beneficial effect on the overall performance effectiveness of e-learning (Al-Fraihat et al. 2020), then positively influences e-learning performance (Cidral et al., 2020; Montrieux et al., 2015). Cidral et al. (2018) conducted a study on the successful model of the e-learning system in Brazil. Their research concludes student satisfaction is a determinant of the success of using e-learning systems. In addition, they concluded that usage and user satisfaction positively impacted higher long-term benefits. The study results also show that the quality of the e-learning system and the quality of the information positively impact student satisfaction and the successful use of the e-learning system (Cidral et al., 2020).

H5: Usage satisfaction affects e-learning system success

RESEARCH METHODS

This study uses a quantitative-deductive approach because it is based on a theoretical relationship between concepts and develops hypotheses tested in empirical studies. Data were obtained through a survey using a questionnaire. This study uses a survey approach because it pays attention to several factors that explain the phenomenon under investigation. The number of respondents is 250 students at a university in Yogyakarta, Indonesia. The criteria for the respondents are all students who are involved in the use of e-learning. The questionnaire was made based on a five-point Likert scale. Several research instruments were adopted from previous researchers. Social influence adopted the research instrument of Ouajdouni et al. (2021); Naveed et al. (2021). Satisfaction with using the tool produced by Hadullo et al. (2017), student computer anxiety from

Zhang & Zhu (2021). The PU instrument adopted research indicators from Al-Fraihat et al. (2020). The data analysis technique uses a structural model with Partial Least Square software. Hypothesis testing is done by using the structural equation modeling (SEM) technique using Partial Least Square. This technique is used because of its ability to estimate the relationship of multiple interrelated dependencies, as well as to represent concepts that cannot be observed in the relationship, and to check for measurement errors in the estimation process (Hair et al., 2014).

RESULT

Finding

This study tested the e-learning success model with 250 student respondents. Descriptions of research respondents can be seen in Table 1.

Table 1. Descriptive Analysis Respondent

Respondent's description	%	Respondent's Description	%
Age:		Length of Using E-learning:	
<19 years old	57	< one years	10
19-22 years old	36	1-2 years	70
>22 years old	7	>Two years	20
Frequency of using the internet per-day:			
< 5 Hours	25	Gender:	
5-10 Hours	35	Man	52
>10 Hours	40	Woman	48

Sources: Questionnaire Participants' Analysis

Validity and Reliability

In this study, a structural model based on the partial least-squares method was used. According to Hair et al. (2020); Hair et al. (2014), Partial Least Square analysis uses a two-step approach. The former focuses on the results of the measurement model (Outer model), and the latter on the results of the structural model (inner model). The Outer Model focuses on checking the validity and reliability of each indicator on its latent variables. The outer model was assessed using Convergent Validity, with the loading factor value > 0.7. However, a loading factor value from 0.5 to 0.6 is considered sufficient for tests at the early stages of the measurement scale development. In this study, a limiting factor of 0.7 will be used. Table 2 shows the results of the Convergent Validity test.

Tabel 2. Outer loading

	E-learning Success	Learner anxiety	P.U.	Social Influence	Usage Satisfaction
x11		0.775			
x12		0.782			
x13		0.719			
x21				0.823	
x22				0.842	
x23				0.862	
x24				0.883	
x31			0.823		
x32			0.889		
x33			0.841		
x34			0.857		
y11	0.810				
y12	0.805				

y13	0.850				
y14	0.777				
y15	0.787				
y16	0.763				
z11					0.793
z12					0.792
z13					0.799
z14					0.848
z15					0.698

Sources: Questionnaire Participants' Analysis

Table 2 shows that all the instruments used in the study have an excellent convergent validity as they have a loading factor of 0.7. The discriminant validity test results in this study also have an excellent factor-loading value. It can be concluded that the discriminant validity of the tools used in this study is acceptable.

Table 3. Reliability test results

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
E-learning Success	0.887	0.889	0.914	0.639
Learner anxiety	0.639	0.630	0,803	0.576
Perceived Usefullness	0.875	0.880	0.914	0.727
Social Influence	0.875	0.878	0.914	0.727
Usage Satisfaction	0.845	0.846	0.890	0.620

Sources: Questionnaire Participants' Analysis

Table 3 shows that the reliability test of the research instrument has good reliability. Reliability can be seen from the value of the loading factor, and each reliability criterion has a loading factor of 0.7 (Hair et al., 2014; Hair et al., 2020).

Structural Models

The results of the structural model test were carried out by observing the R^2 and GoF values. Based on the output of PLS 3.2.9, the results of the structural model test of this study can be seen in table 4. The relationship between the variables analyzed in the research model is presented in Figure 1.

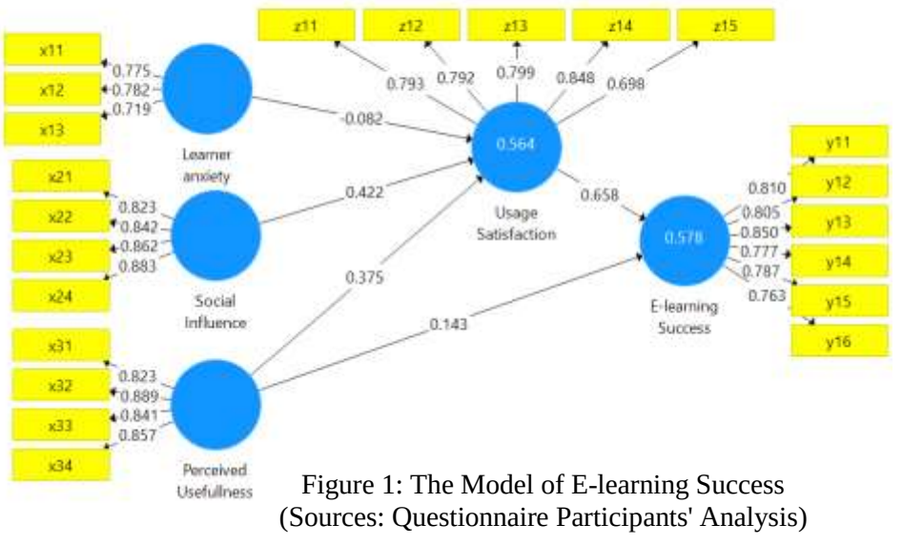

Figure 1: The Model of E-learning Success
(Sources: Questionnaire Participants' Analysis)

Figure 1 shows the relationship between the variables that shape the success of e-learning adoption. Usage satisfaction shows the most significant influence on the success of e-learning adoption, and social influence also indicates a relatively high impact on usage satisfaction. In the condition of involuntary adoption, it turned out to increase the high level of saturation on the computer, so that it had an impact on user satisfaction. However, the effect was relatively minimal. P.U. has also not been able to influence the success of e-learning adoption directly. P.U. can affect success through mediating usage satisfaction first.

Table 4. The Structural Fit Model

R^2		
	R Square	R Square Adjusted
E-learning Success	0.578	0.574
Usage Satisfaction	0.564	0.557
Predictive Relevance (Q-Square)		
$Q^2 = 1 – (1 – R1^2) (1 – R2^2)$ $Q^2 = 1 – (1 – 0.578) (1 – 0.564)$ $Q^2 = 1 – (0.422) (0.436)$ $Q^2 = 1 – 0.184$ $Q^2 = 0.816$		
The goodness of Fit (GoF)		
GoF = 0.613		

Sources: Questionnaire Participants' Analysis

Table 4 shows the value of R^2 greater than 0.6, which means that the relationship between variables in the research model is powerful (Hair et al., 2014). The R^2 adjusted trust value is 0.557, meaning usage satisfaction moderate relates to Learner anxiety, Social Influence, and Perceived Usefulness. E-learning success has an Adjusted R^2 of 0.574, indicating that e-learning success has a good relationship with Learner anxiety, Social Influence, Perceived Usefulness, and usage satisfaction. Predictive relevance Q-square measures how well the observed values generated by the model and parameters are estimated. The Q^2 and GoF values are close to 1, indicating that the model has good predictive relevance. Based on the Q^2 and GoF calculations, the results are 0.816 and 0.613, meaning that learner computer anxiety, Social Influence, Perceived Usefulness, and usage satisfaction can predict e-learning success well. Table 4 also shows that the e-learning success model for students in the Special Region of Yogyakarta has an excellent model to be accepted.

Hypothesis testing results

The p-value is used to test the significance of the relationship between the variables of this study. The results of testing the relationship between variables using PLS-SEM can be seen in table 5.

Table 5. Mean, STDEV, T-Values, P-Values

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
H1: Learner computer anxiety → Usage Satisfaction	-0.082	-0.090	0.051	1.599	0.111
H2: Social Influence →Usage Satisfaction	0.422	0.425	0.071	5.965	0.000
H3: Perceived Usefullness → Usage Satisfaction	0.375	0.370	0.070	5.386	0.000
H4: Perceived Usefullness → E-learning Success	0.143	0.140	0.079	1.799	0.073
H5: Usage Satisfaction → E-learning Success	0.658	0.663	0.066	9.927	0.000

Sources: Questionnaire Participants' Analysis

This study uses t-statistics, and the p-value is used to measure the significance level of the model. The significance value of the t-value used is 1.96 (5% significance level) and p-value <0.05. Table 5 shows that the hypothesis in this study has a significant relationship except for the relationship between learner anxiety and usage satisfaction (t-statistic = 1.599 and p-value = 0.111) and perceived usefulness to e-learning success (t-statistic = 1.799 and p-value = 0.073). On the other hand, a significant relationship is found in the hypothesis of perceived usefulness on usage satisfaction (t-statistic = 5.386 and p-value = 0.000), social influence on usage satisfaction (t-statistic = 5.965 and p-value = 0.000), and usage satisfaction on e-learning success (t-statistic = 9.927 / p-value = 0.000). Overall, H2, H3, and H5 are supported, while H1 and H4 are not supported.

DISCUSSION

The results of this study indicate that the e-learning success model is acceptable, but in this model, two paths have no significant effect. Learner computer anxiety has an insignificant negative impact on user satisfaction. This shows that students who use e-learning have not concerned about using this system. These students feel nervous, uncomfortable, and still feel confused in using this e-learning system. The involuntary adoption of e-learning and sudden changes in the learning process cause students to not enjoy online learning. Students are still groping about this online learning and have to change the way of learning ultimately. So that many students are surprised when faced with distance learning which has never been done so far. Students were also in shock because they had to change their college habits completely. This condition will reduce their success in adopting e-learning. This result can happen because e-learning has just been adopted since the Covid-19 pandemic in universities in the Special Region of Yogyakarta. This adoption forces students to adopt, even though the conditions do not meet the various e-learning system requirements. This effect is not significant, which means that there is a possibility that this effect may not occur. So, that in the e-learning success model, the impact of learner computer anxiety can be ignored. The direct consequence of P.U. on e-learning success is also not significant. P.U. affects the success of e-learning through user satisfaction. So, the students will be able to successfully adopt e-learning if they are satisfied with the e-learning system first.

The results of this study support the opinion of Nikolić et al. (2018); Li et al. (2015), which states that there is a positive relationship between e-learning success and social influence. Students are encouraged to adopt e-learning if there is support from friends in their environment. In some campuses, the implementation of e-learning is supported by experienced instructors to satisfy students with the assistance they receive. The readiness of the Faculty's e-learning staff also motivates students to like using e-learning. The effect of user satisfaction on e-learning success hypothesized in this study is supported. Many students who are satisfied with e-learning encourage them to complete all tasks that must be completed with e-learning facilities. Students feel comfortable in the e-learning system offered by each university. There is a positive perception of e-learning and considers e-learning very helpful in carrying out daily academic tasks. This study supports the findings of several previous researchers who stated that usage satisfaction had a good impact on overall e-learning performance Al-Fraihat et al., (2020); Cidral et al. (2020); Montrieux et al. (2015). These researchers show that use and user satisfaction positively impact higher long-term oriented benefits (Cidral et al., 2018). The study results also show that the quality of the e-learning system and the quality of information positively impact student satisfaction and successful use of the e-learning system.

CONCLUSION

The article must have a conclusion section. This study examines the e-learning system success model that connects learner variables computer anxiety, social influence, perceived usefulness, and

usage satisfaction. Two hypotheses were found that were not significant. Learner computer anxiety has an insignificant negative effect on usage satisfaction. P.U. also has a negligible positive impact on e-learning system success. This study provides a theoretical contribution to the learner computer anxiety variable, which negatively influences usage satisfaction. In the condition that users face a situation that they must adopt, it turns out that anxiety does not significantly impact satisfaction with using an innovation (e-learning system). Users will quickly adapt to the online learning environment even if they have never used it before. The need to quickly adopt this new technology breaks down the anxieties faced by users. In addition, respondents' students have the characteristics of being early adopters, with the following elements: young age and have a high level of education. Early adopters make it easier for students to adopt the new e-learning system. The perceived benefits that students feel in e-learning do not necessarily affect their success in using e-learning. Students must first feel satisfaction with the e-learning they adopt before they succeed in the e-learning system at their university. Another contribution is related to social influence on usage satisfaction, which showed a significant positive effect in this study. The practical contribution of this research is associated with the relationship between social impact and P.U. on usage satisfaction. Higher Education managers should continue to provide encouragement and assistance to students in adopting e-learning. The campus assistance and support can accelerate the success of the e-learning system implemented by Higher Education. Besides, it is better if, in implementing the e-learning system, Higher Education managers provide mentoring and training to students to recognize how e-learning works and the benefits of e-learning quickly. Knowledge of e-learning can increase the perceived benefits of students. Increased PU can increase satisfaction and success in using e-learning.

This study examines the success of e-learning from the inner side of users, namely students. The outer side of the user has not been observed in the success of e-learning. According to (Yekefallah et al., 2021); (Hassanzadeh et al., 2012); (Ouajdouni et al., 2021), the successful adoption of e-learning can be caused by the quality of the system, characteristics of the instructor, e-learning environment, service quality, and instructional design made by the Faculty. So for future research, it is better to explore the external influence of individuals that affect the success of e-learning. This study found an insignificant relationship between computer anxiety learners on usage satisfaction. Future research is expected to re-examine the effect of learner computer anxiety to justify the relationship between these two variables. Public Works in this study also does not directly affect the success of the e-learning system implemented in universities. Researchers should deepen the relationship between these two variables by researching the same setting, namely in students who are forced to adapt, to understand better the relationship between P.U. and the successful adoption of e-learning systems in universities.

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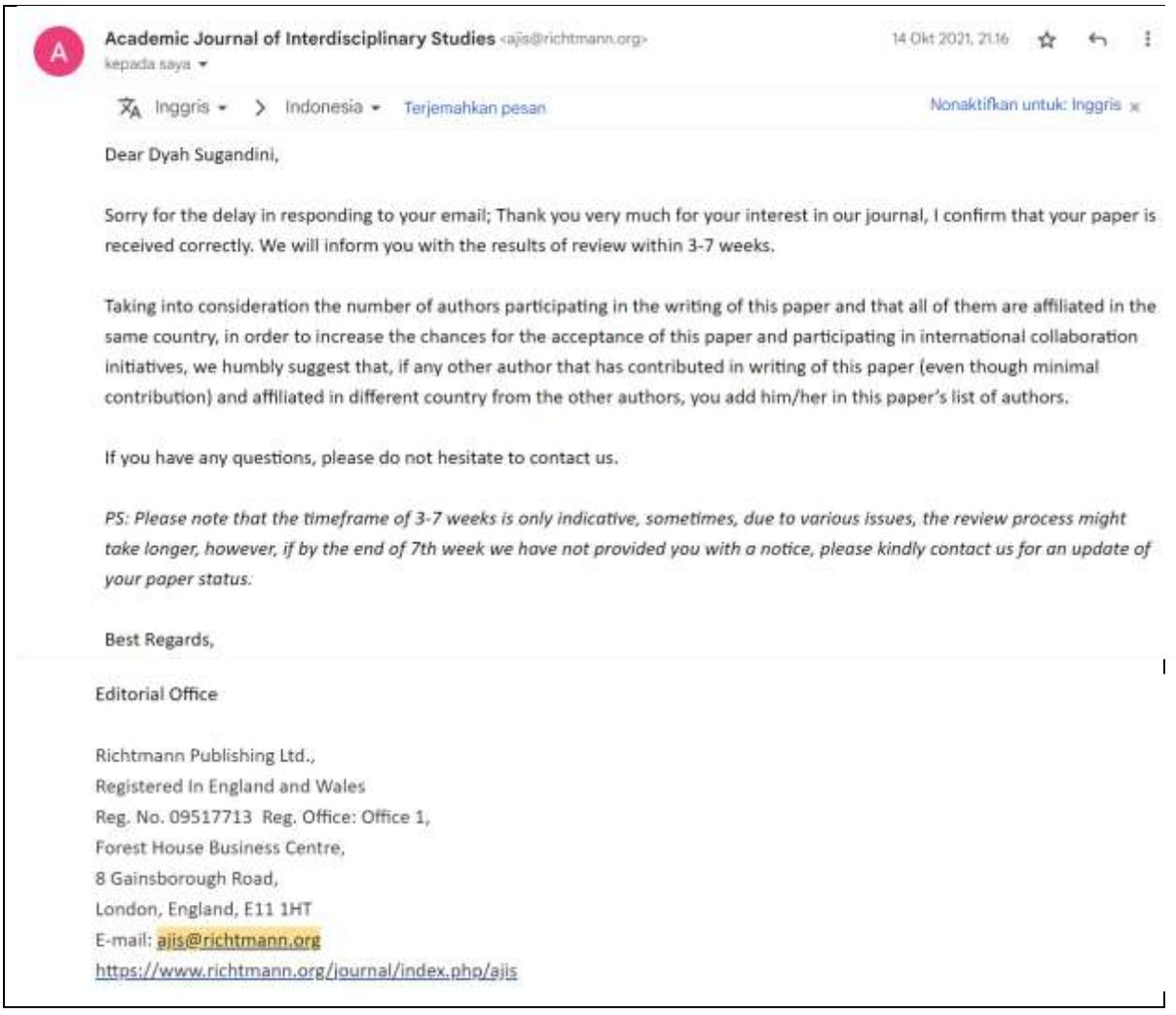

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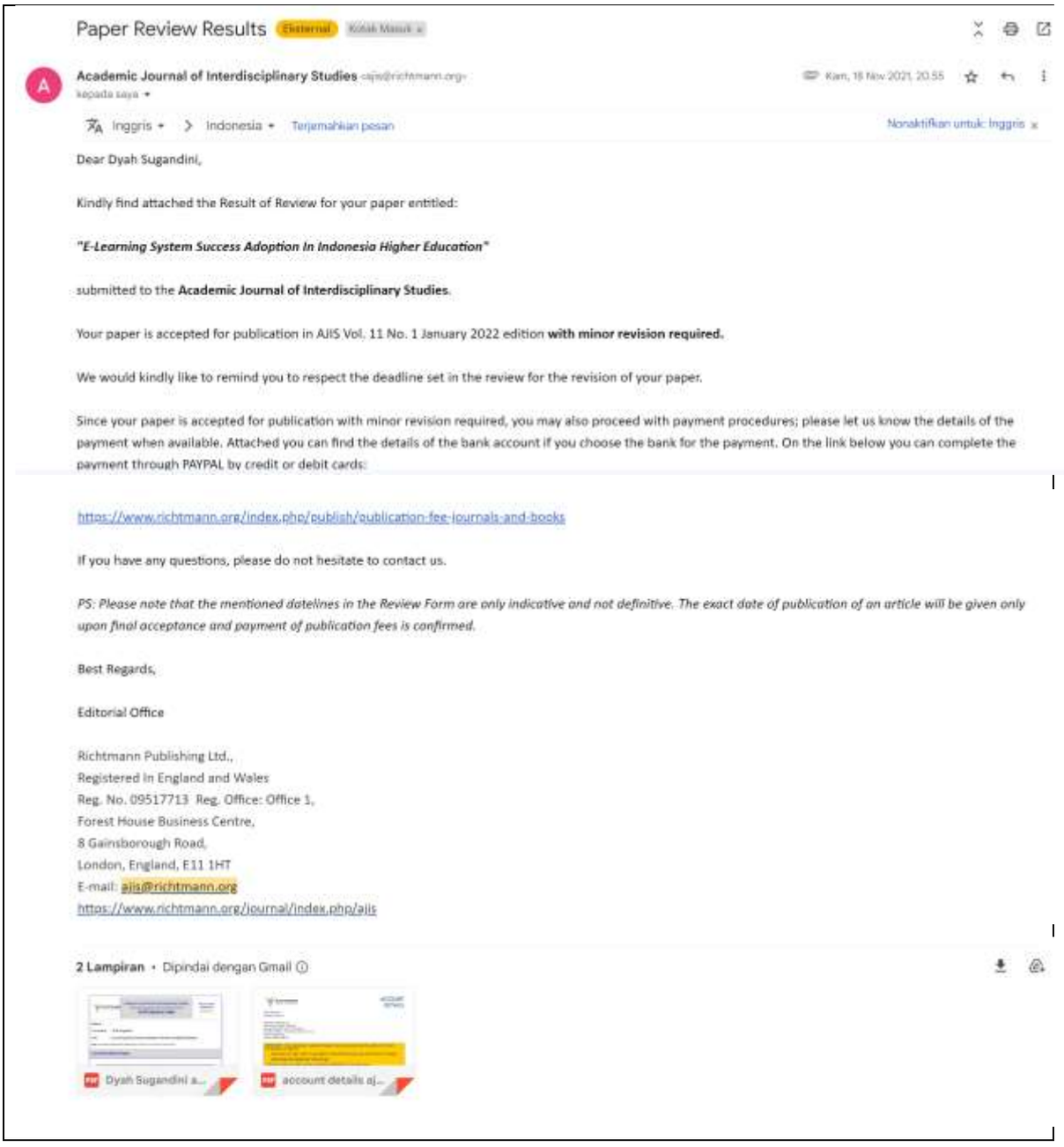

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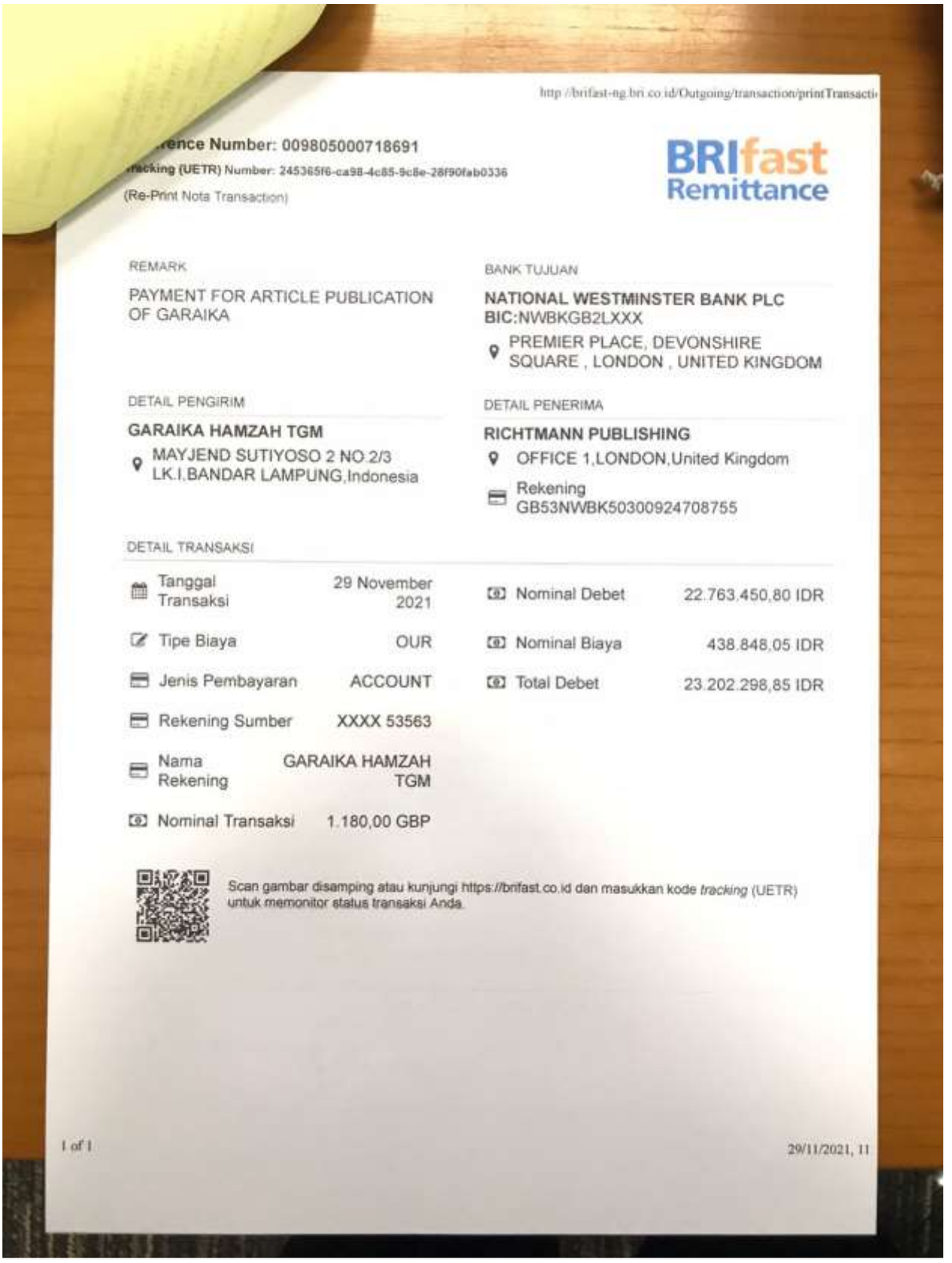

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E-LEARNING SYSTEM SUCCESS ADOPTION IN INDONESIA HIGHER EDUCATION

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ABSTRACT

This study aims to analyze the success of the e-learning system, which is influenced by learner computer anxiety, social influence, perceived usefulness, and usage satisfaction. This study uses a survey, with the respondents being students at universities in the Special Region of Yogyakarta, Indonesia. The number of respondents is 250 people. The sampling technique is purposive sampling, and the data analysis method uses a structural model, namely PLS-SEM. The results showed that the e-learning adoption success model was accepted. However, this study's results showed that the effect of perceived usefulness and learner computer anxiety on adoption is not significant. This research has a novelty related to adopting innovations, namely e-learning in forced conditions, and there is no choice but online learning, which must be done during the Covid-19 pandemic. This research contributes to the support of the technology adoption theory by users in situations of involuntary adoption.

Keywords: Learner anxiety, social influence, perceived usefulness, satisfaction, and e-learning success.

JEL Classification: A200, O330

INTRODUCTION

The evolution of information technology has encouraged improvements in various fields, including education. Online schools enable education to increase and promote e-learning adoption. E-learning integrates education and technology, which has become a vital learning requirement (Al-Fraihat et al., 2020). The E-Learning paradigm is a mode of distance education. It has proven to be the only avenue that allows the continuation of learning under the global lockdown conditions due to the COVID-19 pandemic. Many studies in e-learning have proposed several topics about the critical success factors of e-learning, such as system quality, information quality, service quality, satisfaction, and usability. The need for a comprehensive e-learning success model should be made at different levels of success (Nikolić et al., 2018). The Covid19 pandemic has forced many Indonesian universities to use online learning by utilizing e-learning systems and various other media. The reduction in face-to-face classes has caused e-learning to become a much-needed technology in low-down conditions and the Enforcement of Restrictions on Community Activities (Sugandini et al., 2019). Many universities use social media to facilitate teaching and learning activities and online learning-based learning management systems (Mulyono et al., 2021). This study seeks to analyze the success of e-learning adoption from the user or student side in Indonesia. Initial research conducted by Sugandini shows that many students are resistant to using e-learning systems or online learning. Many students feel bored because they always have to interact and teach without direct physical interaction. Another research on e-learning in Indonesia has been conducted Indonesia based on TAM. This study was conducted by Sukendro et al. (2020), who found that TAM has succeeded in explaining the factors that predict the use of e-learning among students.

There is a significant relationship between the convenience factor and perceived ease of use. However, the association of perceived benefits to attitudes was not significant. This research is

critical because: (1) Research on the factors that influence the success of e-learning can be used as a reference for universities to manage their e-learning. (2) this study observes the inner side of the user, which in most studies has not been done much. (3) This study analyzes user satisfaction as one of the factors influencing the success of e-learning. Because e-learning is a new compulsion that must be implemented immediately, user satisfaction becomes an important thing that needs to be analyzed (Yawson and Yamoah 2020). This study analyzes the e-learning success model, influenced by user satisfaction, perceived usefulness (P.U.), learner computer anxiety, and social influence. The study was conducted on students in the Special Region of Yogyakarta, Indonesia, who are still actively participating in lectures.

LITERATURE REVIEW

E-learning success

E-learning during the COVID-19 pandemic has excellent potential in supporting online learning. In Indonesia, the prospect of e-learning has been utilized by all universities. University managers and the government have sought many things to make this e-learning system a success. The incredible attention to the success of e-learning has led to a lot of research on this topic. On the other hand, the success of the e-learning system is also not accompanied by the risk of implementing e-learning. Many students choose to drop out of school because of the lack of funds to participate in online learning. Students also decided not to continue their studies because they felt bored and disappointed with the e-learning provided by the government and universities. These phenomena turned out to be interesting to study. Several previous researchers have studied several factors causing the success of e-learning. Usage satisfaction is one of the causes of successful e-learning adoption **(**Cidral et al., 2020). Other researchers also show that the success of e-learning can be driven by the use of an e-learning system, perceived usefulness, learner computer anxiety, social influence, system quality, and learner quality (Yawson and Yamoah 2020).

Learner computer anxiety and usage satisfaction

Learner computer anxiety concerns computer technology anxiety and hurts satisfaction. Learner computer anxiety prevents e-learning success (Naveed et al., 2021). Individuals who have a more positive attitude towards technology will better adapt to technology and reduce anxiety levels (Cidral et al., 2020). Online learning anxiety and worry are triggered by uncertainty so that it is negatively correlated with learning effectiveness. Learner computer anxiety inhibits students' disposition to learn online. Feelings of anxiety can also reduce students' motivation and self-efficacy (Sun and Rueda 2012). Student anxiety is often associated with various factors: lack of clear instructions and feedback, inability to manage workload, feelings of isolation, lack of self-confidence, and negative past experiences (Abdous, 2019). Students who are not prepared for online lectures, especially those with minimal confidence in computer technology, often show different levels of online learning anxiety.

On the other hand, students with high confidence in computer technology tend to be more adaptable to online learning. Students who have a good perception of computer technology do not see the negative side of the online learning experience. Unprepared online teachers also show feelings of sadness and anxiety with this online technology. So, online technology affects their self-efficacy and ability to teach. Self-efficacy develops quality learning (Naveed et al., 2021). The research of Ouajdouni et al. (2021) shows that social and public works significantly influence the use of e-learning systems. On the other hand, fear of computer anxiety affects satisfaction with e-learning.

H1: Learner computer anxiety has an impact on usage satisfaction

Social Influence and usage satisfaction

Social influence is an essential aspect of the UTAUT model. Social impact is taking into account the opinions of others when using new technologies or innovations. This social impact motivates a person to discover the various factors of e-learning and increase their satisfaction with it. Social support and influence can affect user satisfaction (Nikolić et al., 2018). Pornsakulvanich (2017)

also investigated the impact of social influence on user satisfaction. The study was carried out by 460 respondents aged 18 to 25 from these three social network platforms: Facebook, Instagram, and Line. In particular, social influence has a positive effect on support satisfaction and overall support frequency. The findings from Li et al. (2015) study also show that social support is positively related to user satisfaction on Facebook users.

H2: Social influence has an impact on usage satisfaction

Perceived Usefulness and e-learning system success

Davis' Technology Adoption Model (TAM) has become the most widely used theory for measuring the success of new technologies in terms of technology adoption and use (Sukendro et al. 2020). TAM is derived from the Theory of Reasoned Action (TRA) and has become part of social psychology theory. The TAM model shows that when users adopt new technology, they will be heavily influenced by internal and external factors. External factors include social factors, cultural factors, and political factors. Internal factors include perceived usefulness and perceived ease of use. Perceived usefulness and PEOU have a positive relationship to user satisfaction and successful adoption of three social networking sites (Pornsakulvanich, 2017). Testing the relationship between P.U. on user satisfaction has been carried out by (Hämäläinen et al., 2021) on 15-year-old Finnish adolescents regarding universal web-based acceptance. In his study, it was found that 82% of teenagers were quite active to very active in using the Youth Compass. The results showed that the P.U. perceived by the respondents was relatively high, so it impacted the perceived satisfaction of the program. Perceived use of the system is an important measure that affects the happiness and success of e-learning adoption (Ramadiani et al., 2017). Testing the relationship between P.U. on satisfaction and successful adoption of e-learning was carried out by (Nugroho et al., 2019). The consequence of his study is that satisfaction has an influential mediating role in the relationship between perceived usefulness and continued intention in e-learning adoption. Decision-making in adopting information systems such as e-learning needs to recollect numerous factors, including user satisfaction. This study provides tips and proof that user satisfaction is quite significant in influencing the continuity of the use of e-learning

H3: Perceived Usefulness affects usage satisfaction

H4: Perceived Usefulness affects e-learning system success

Usage satisfaction and e-learning system success

Student satisfaction for usage e-learning has a beneficial effect on the overall performance effectiveness of e-learning (Al-Fraihat et al. 2020), then positively influences e-learning performance (Cidral et al., 2020; Montrieux et al., 2015). Cidral et al. (2018) conducted a study on the successful model of the e-learning system in Brazil. Their research concludes student satisfaction is a determinant of the success of using e-learning systems. In addition, they concluded that usage and user satisfaction positively impacted higher long-term benefits. The study results also show that the quality of the e-learning system and the quality of the information positively impact student satisfaction and the successful use of the e-learning system (Cidral et al., 2020).

H5: Usage satisfaction affects e-learning system success

RESEARCH METHODS

This study uses a quantitative-deductive approach because it is based on a theoretical relationship between concepts and develops hypotheses tested in empirical studies. Data were obtained through a survey using a questionnaire. This study uses a survey approach because it pays attention to several factors that explain the phenomenon under investigation. The number of respondents is 250 students at a university in Yogyakarta, Indonesia. The criteria for the respondents are all students who are involved in the use of e-learning. The questionnaire was made based on a five-point Likert scale. Several research instruments were adopted from previous researchers. Social influence adopted the research instrument of Ouajdouni et al. (2021); Naveed et al. (2021). Satisfaction with using the tool produced by Hadullo et al. (2017), student computer anxiety from

Zhang & Zhu (2021). The PU instrument adopted research indicators from Al-Fraihat et al. (2020). The data analysis technique uses a structural model with Partial Least Square software. Hypothesis testing is done by using the structural equation modeling (SEM) technique using Partial Least Square. This technique is used because of its ability to estimate the relationship of multiple interrelated dependencies, as well as to represent concepts that cannot be observed in the relationship, and to check for measurement errors in the estimation process (Hair et al., 2014).

RESULT

Finding

This study tested the e-learning success model with 250 student respondents. Descriptions of research respondents can be seen in Table 1.

Table 1. Descriptive Analysis Respondent

Respondent's description	%	Respondent's Description	%
Age:		Length of Using E-learning:	
<19 years old	57	< one years	10
19-22 years old	36	1-2 years	70
>22 years old	7	> Two years	20
Frequency of using the internet per-day:			
< 5 Hours	25	Gender:	
5-10 Hours	35	Man	52
>10 Hours	40	Woman	48

Sources: Questionnaire Participants' Analysis

Validity and Reliability

In this study, a structural model based on the partial least-squares method was used. According to Hair et al. (2020); Hair et al. (2014), Partial Least Square analysis uses a two-step approach. The former focuses on the results of the measurement model (Outer model), and the latter on the results of the structural model (inner model). The Outer Model focuses on checking the validity and reliability of each indicator on its latent variables. The outer model was assessed using Convergent Validity, with the loading factor value > 0.7. However, a loading factor value from 0.5 to 0.6 is considered sufficient for tests at the early stages of the measurement scale development. In this study, a limiting factor of 0.7 will be used. Table 2 shows the results of the Convergent Validity test.

Tabel 2. Outer loading

	E-learning Success	Learner anxiety	P.U.	Social Influence	Usage Satisfaction
x11		0.775			
x12		0.782			
x13		0.719			
x21				0.823	
x22				0.842	
x23				0.862	
x24				0.883	
x31			0.823		
x32			0.889		
x33			0.841		
x34			0.857		
y11	0.810				
y12	0.805				

y13	0.850				
y14	0.777				
y15	0.787				
y16	0.763				
z11					0.793
z12					0.792
z13					0.799
z14					0.848
z15					0.698

Sources: Questionnaire Participants' Analysis

Table 2 shows that all the instruments used in the study have an excellent convergent validity as they have a loading factor of 0.7. The discriminant validity test results in this study also have an excellent factor-loading value. It can be concluded that the discriminant validity of the tools used in this study is acceptable.

Table 3. Reliability test results

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
E-learning Success	0.887	0.889	0.914	0.639
Learner anxiety	0.639	0.630	0,803	0.576
Perceived Usefullness	0.875	0.880	0.914	0.727
Social Influence	0.875	0.878	0.914	0.727
Usage Satisfaction	0.845	0.846	0.890	0.620

Sources: Questionnaire Participants' Analysis

Table 3 shows that the reliability test of the research instrument has good reliability. Reliability can be seen from the value of the loading factor, and each reliability criterion has a loading factor of 0.7 (Hair et al., 2014; Hair et al., 2020).

Structural Models

The results of the structural model test were carried out by observing the R^2 and GoF values. Based on the output of PLS 3.2.9, the results of the structural model test of this study can be seen in table 4. The relationship between the variables analyzed in the research model is presented in Figure 1.

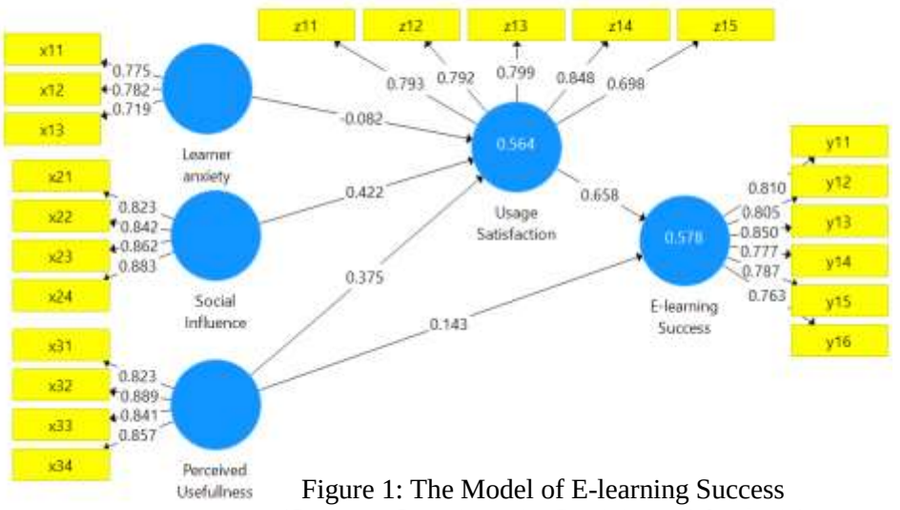

Figure 1: The Model of E-learning Success
(Sources: Questionnaire Participants' Analysis)

Figure 1 shows the relationship between the variables that shape the success of e-learning adoption. Usage satisfaction shows the most significant influence on the success of e-learning adoption, and social influence also indicates a relatively high impact on usage satisfaction. In the condition of involuntary adoption, it turned out to increase the high level of saturation on the computer, so that it had an impact on user satisfaction. However, the effect was relatively minimal. P.U. has also not been able to influence the success of e-learning adoption directly. P.U. can affect success through mediating usage satisfaction first.

Table 4. The Structural Fit Model

R^2		
	R Square	R Square Adjusted
E-learning Success	0.578	0.574
Usage Satisfaction	0.564	0.557
Predictive Relevance (Q-Square)		
$Q^2 = 1 – (1 – R1^2) (1 – R2^2)$ $Q^2 = 1 – (1 – 0.578) (1 – 0.564)$ $Q^2 = 1 – (0.422) (0.436)$ $Q^2 = 1 – 0.184$ $Q^2 = 0.816$		
The goodness of Fit (GoF)		
GoF = 0.613		

Sources: Questionnaire Participants' Analysis

Table 4 shows the value of R^2 greater than 0.6, which means that the relationship between variables in the research model is powerful (Hair et al., 2014). The R^2 adjusted trust value is 0.557, meaning usage satisfaction moderate relates to Learner anxiety, Social Influence, and Perceived Usefulness. E-learning success has an Adjusted R^2 of 0.574, indicating that e-learning success has a good relationship with Learner anxiety, Social Influence, Perceived Usefulness, and usage satisfaction. Predictive relevance Q-square measures how well the observed values generated by the model and parameters are estimated. The Q^2 and GoF values are close to 1, indicating that the model has good predictive relevance. Based on the Q^2 and GoF calculations, the results are 0.816 and 0.613, meaning that learner computer anxiety, Social Influence, Perceived Usefulness, and usage satisfaction can predict e-learning success well. Table 4 also shows that the e-learning success model for students in the Special Region of Yogyakarta has an excellent model to be accepted.

Hypothesis testing results

The p-value is used to test the significance of the relationship between the variables of this study. The results of testing the relationship between variables using PLS-SEM can be seen in table 5.

Table 5. Mean, STDEV, T-Values, P-Values

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
H1: Learner computer anxiety → Usage Satisfaction	-0.082	-0.090	0.051	1.599	0.111
H2: Social Influence →Usage Satisfaction	0.422	0.425	0.071	5.965	0.000
H3: Perceived Usefullness → Usage Satisfaction	0.375	0.370	0.070	5.386	0.000
H4: Perceived Usefullness → E-learning Success	0.143	0.140	0.079	1.799	0.073
H5: Usage Satisfaction → E-learning Success	0.658	0.663	0.066	9.927	0.000

Sources: Questionnaire Participants' Analysis

This study uses t-statistics, and the p-value is used to measure the significance level of the model. The significance value of the t-value used is 1.96 (5% significance level) and p-value <0.05. Table 5 shows that the hypothesis in this study has a significant relationship except for the relationship between learner anxiety and usage satisfaction (t-statistic = 1.599 and p-value = 0.111) and perceived usefulness to e-learning success (t-statistic = 1.799 and p-value = 0.073). On the other hand, a significant relationship is found in the hypothesis of perceived usefulness on usage satisfaction (t-statistic = 5.386 and p-value = 0.000), social influence on usage satisfaction (t-statistic = 5.965 and p-value = 0.000), and usage satisfaction on e-learning success (t-statistic = 9.927 / p-value = 0.000). Overall, H2, H3, and H5 are supported, while H1 and H4 are not supported.

DISCUSSION

The results of this study indicate that the e-learning success model is acceptable, but in this model, two paths have no significant effect. Learner computer anxiety has an insignificant negative impact on user satisfaction. This shows that students who use e-learning have not concerned about using this system. These students feel nervous, uncomfortable, and still feel confused in using this e-learning system. The involuntary adoption of e-learning and sudden changes in the learning process cause students to not enjoy online learning. Students are still groping about this online learning and have to change the way of learning ultimately. So that many students are surprised when faced with distance learning which has never been done so far. Students were also in shock because they had to change their college habits completely. This condition will reduce their success in adopting e-learning. This result can happen because e-learning has just been adopted since the Covid-19 pandemic in universities in the Special Region of Yogyakarta. This adoption forces students to adopt, even though the conditions do not meet the various e-learning system requirements. This effect is not significant, which means that there is a possibility that this effect may not occur. So, that in the e-learning success model, the impact of learner computer anxiety can be ignored. The direct consequence of P.U. on e-learning success is also not significant. P.U. affects the success of e-learning through user satisfaction. So, the students will be able to adopt e-learning if they are satisfied with the e-learning system.

The results of this study support the opinion of Nikolić et al. (2018); Li et al. (2015), which states that there is a positive relationship between e-learning success and social influence. Students are encouraged to adopt e-learning if there is support from friends in their environment. In some campuses, the implementation of e-learning is supported by experienced instructors to satisfy students with the assistance they receive. The readiness of the Faculty's e-learning staff also motivates students to like using e-learning. The effect of user satisfaction on e-learning success hypothesized in this study is supported. Many students who are satisfied with e-learning encourage them to complete all tasks that must be completed with e-learning facilities. Students feel comfortable in the e-learning system offered by each university. There is a positive perception of e-learning and considers e-learning very helpful in carrying out daily academic tasks. This study supports the findings of several previous researchers who stated that usage satisfaction had a good impact on overall e-learning performance Al-Fraihat et al., (2020); Cidral et al. (2020); Montrieux et al. (2015). These researchers show that use and user satisfaction positively impact higher long-term oriented benefits (Cidral et al., 2018). The study results also show that the quality of the e-learning system and the quality of information positively impact student satisfaction and successful use of the e-learning system.

CONCLUSION

The article must have a conclusion section. This study examines the e-learning system success model that connects learner variables computer anxiety, social influence, perceived usefulness, and

usage satisfaction. Two hypotheses were found that were not significant. Learner computer anxiety has an insignificant negative effect on usage satisfaction. P.U. also has a negligible positive impact on e-learning system success. This study provides a theoretical contribution to the learner computer anxiety variable, which negatively influences usage satisfaction. In the condition that users face a situation that they must adopt, it turns out that anxiety does not significantly impact satisfaction with using an innovation (e-learning system). Users will quickly adapt to the online learning environment even if they have never used it before. The need to quickly adopt this new technology breaks down the anxieties faced by users. In addition, respondents' students have the characteristics of being early adopters, with the following elements: young age and having a high level of education. Early adopters make it easier for students to adopt the new e-learning system. The perceived benefits that students feel in an e-learning do not necessarily affect their success in using e-learning. Students must first feel satisfaction with the e-learning they adopt before they succeed in the e-learning system at their university. Another contribution is related to social influence on usage satisfaction, which showed a significant positive effect in this study. The practical contribution of this research is associated with the relationship between social impact and P.U. on usage satisfaction. Higher Education managers should continue to provide encouragement and assistance to students in adopting e-learning. The campus assistance and support can accelerate the success of the e-learning system implemented by Higher Education. Besides, it is better if, in implementing the e-learning system, Higher Education managers provide mentoring and training to students to recognize how e-learning works and the benefits of e-learning quickly. Knowledge of e-learning can increase the perceived benefits of students. Increased PU can increase satisfaction and success in using e-learning.

This study examines the success of e-learning from the inner side of users, namely students. The outer side of the user has not been observed in the success of e-learning. According to (Yekefallah et al., 2021); (Hassanzadeh et al., 2012); (Ouajdouni et al., 2021), the successful adoption of e-learning can be caused by the quality of the system, characteristics of the instructor, e-learning environment, service quality, and instructional design made by the Faculty. So for future research, it is better to explore the external influence of individuals that affect the success of e-learning. This study found an insignificant relationship between computer anxiety learners on usage satisfaction. Future research is expected to re-examine the effect of learner computer anxiety to justify the relationship between these two variables. Public Works in this study also does not directly affect the success of the e-learning system implemented in universities. Researchers should deepen the relationship between these two variables by researching the same setting, namely in students who are forced to adapt, to understand better the relationship between P.U. and the successful adoption of e-learning systems in universities.

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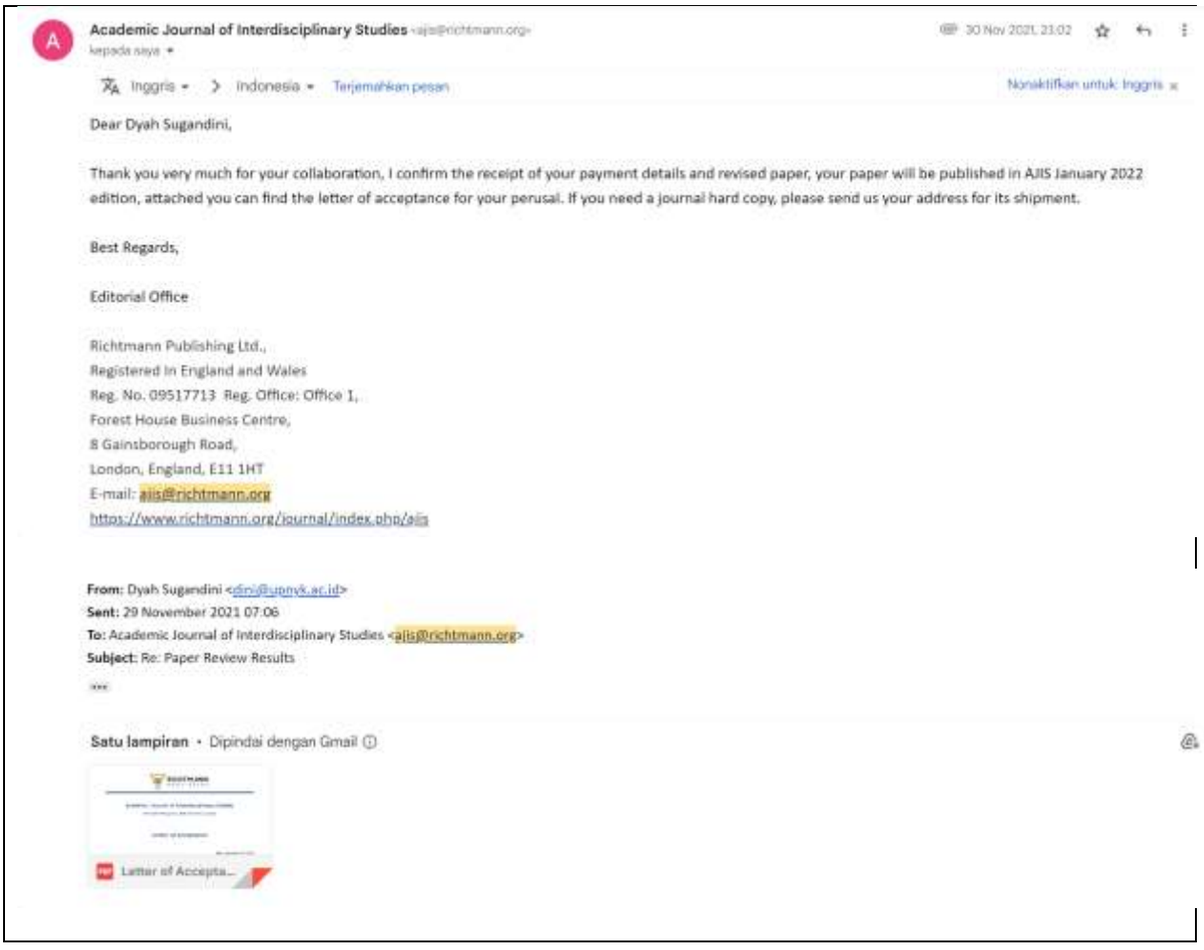

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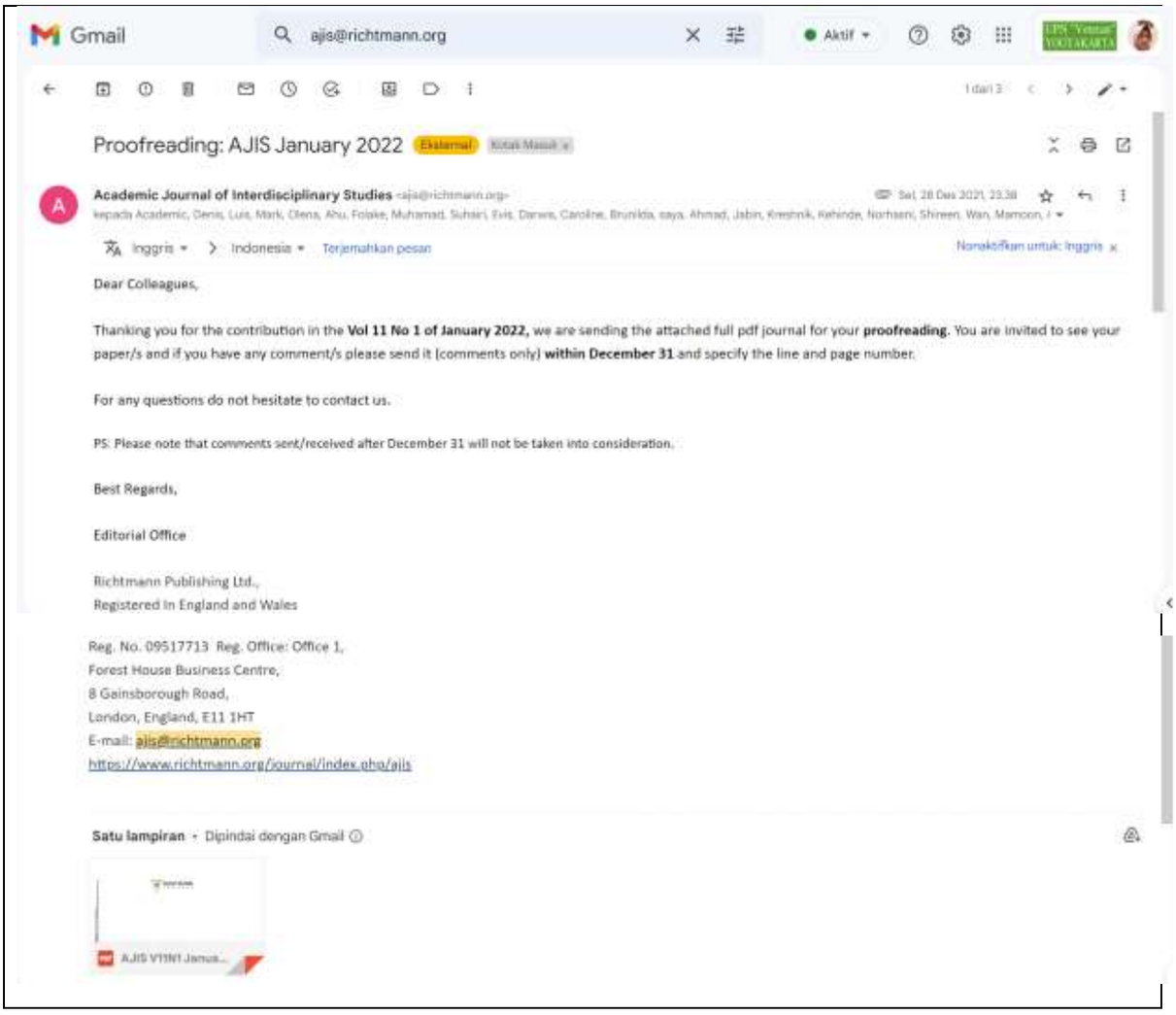
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Research Article

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E-Learning System Success Adoption in Indonesia Higher Education

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Abstract

This study aims to analyze the success of the e-learning system, which is influenced by learner computer anxiety, social influence, perceived usefulness, and usage satisfaction. This study uses a survey, with the respondents being students at universities in the Special Region of Yogyakarta, Indonesia. The number of respondents is 250 people. The sampling technique is purposive sampling, and the data analysis method uses a structural model, namely PLS-SEM. The results showed that the e-learning adoption success model was accepted. However, this study's results showed that the effect of perceived usefulness and learner computer anxiety on adoption is not significant. This research has a novelty related to adopting innovations, namely e-learning in forced conditions, and there is no choice but online learning, which must be done during the Covid-19 pandemic. This research contributes to the support of the technology adoption theory by users in situations of involuntary adoption.

Keywords: *Learner anxiety, social influence, perceived usefulness, satisfaction, and e-learning success.*

1. Introduction

The evolution of information technology has encouraged improvements in various fields, including education. Online schools enable education to increase and promote e-learning adoption. E-learning integrates education and technology, which has become a vital learning requirement (Al-Fraihat et

al., 2020). The E-Learning paradigm is a mode of distance education. It has proven to be the only avenue that allows the continuation of learning under the global lockdown conditions due to the COVID-19 pandemic. Many studies in e-learning have proposed several topics about the critical success factors of e-learning, such as system quality, information quality, service quality, satisfaction, and usability. The need for a comprehensive e-learning success model should be made at different levels of success (Nikolić et al., 2018). The Covid19 pandemic has forced many Indonesian universities to use online learning by utilizing e-learning systems and various other media. The reduction in face-to-face classes has caused e-learning to become a much-needed technology in low-down conditions and the Enforcement of Restrictions on Community Activities (Sugandini et al., 2019). Many universities use social media to facilitate teaching and learning activities and online learning-based learning management systems (Mulyono et al., 2021). This study seeks to analyze the success of e-learning adoption from the user or student side in Indonesia. Initial research conducted by Sugandini shows that many students are resistant to using e-learning systems or online learning. Many students feel bored because they always have to interact and teach without direct physical interaction. Another research on e-learning in Indonesia has been conducted Indonesia based on TAM. This study was conducted by Sukendro et al. (2020), who found that TAM has succeeded in explaining the factors that predict the use of e-learning among students.

There is a significant relationship between the convenience factor and perceived ease of use. However, the association of perceived benefits to attitudes was not significant. This research is critical because: (1) Research on the factors that influence the success of e-learning can be used as a reference for universities to manage their e-learning. (2) this study observes the inner side of the user, which in most studies has not been done much. (3) This study analyzes user satisfaction as one of the factors influencing the success of e-learning. Because e-learning is a new compulsion that must be implemented immediately, user satisfaction becomes an important thing that needs to be analyzed (Yawson and Yamoah 2020). This study analyzes the e-learning success model, influenced by user satisfaction, perceived usefulness (P.U.), learner computer anxiety, and social influence. The study was conducted on students in the Special Region of Yogyakarta, Indonesia, who are still actively participating in lectures.

2. Literature Review

2.1 E-learning success

E-learning during the COVID-19 pandemic has excellent potential in supporting online learning. In Indonesia, the prospect of e-learning has been utilized by all universities. University managers and the government have sought many things to make this e-learning system a success. The incredible attention to the success of e-learning has led to a lot of research on this topic. On the other hand, the success of the e-learning system is also not accompanied by the risk of implementing e-learning. Many students choose to drop out of school because of the lack of funds to participate in online learning. Students also decided not to continue their studies because they felt bored and disappointed with the e-learning provided by the government and universities. These phenomena turned out to be interesting to study. Several previous researchers have studied several factors causing the success of e-learning. Usage satisfaction is one of the causes of successful e-learning adoption (Cidral et al., 2020). Other researchers also show that the success of e-learning can be driven by the use of an e-learning system, perceived usefulness, learner computer anxiety, social influence, system quality, and learner quality (Yawson and Yamoah 2020).

2.2 Learner computer anxiety and usage satisfaction

Learner computer anxiety concerns computer technology anxiety and hurts satisfaction. Learner computer anxiety prevents e-learning success (Naveed et al., 2021). Individuals who have a more

positive attitude towards technology will better adapt to technology and reduce anxiety levels (Cidral et al., 2020). Online learning anxiety and worry are triggered by uncertainty so that it is negatively correlated with learning effectiveness. Learner computer anxiety inhibits students' disposition to learn online. Feelings of anxiety can also reduce students' motivation and self-efficacy (Sun and Rueda 2012). Student anxiety is often associated with various factors: lack of clear instructions and feedback, inability to manage workload, feelings of isolation, lack of self-confidence, and negative past experiences (Abdous, 2019). Students who are not prepared for online lectures, especially those with minimal confidence in computer technology, often show different levels of online learning anxiety.

On the other hand, students with high confidence in computer technology tend to be more adaptable to online learning. Students who have a good perception of computer technology do not see the negative side of the online learning experience. Unprepared online teachers also show feelings of sadness and anxiety with this online technology. So, online technology affects their self-efficacy and ability to teach. Self-efficacy develops quality learning (Naveed et al., 2021). The research of Ouajdouni et al. (2021) shows that social and public works significantly influence the use of e-learning systems. On the other hand, fear of computer anxiety affects satisfaction with e-learning.

H1: Learner computer anxiety has an impact on usage satisfaction

2.3 *Social Influence and usage satisfaction*

Social influence is an essential aspect of the UTAUT model. Social impact is taking into account the opinions of others when using new technologies or innovations. This social impact motivates a person to discover the various factors of e-learning and increase their satisfaction with it. Social support and influence can affect user satisfaction (Nikolić et al., 2018). Pornsakulvanich (2017) also investigated the impact of social influence on user satisfaction. The study was carried out by 460 respondents aged 18 to 25 from these three social network platforms: Facebook, Instagram, and Line. In particular, social influence has a positive effect on support satisfaction and overall support frequency. The findings from Li et al. (2015) study also show that social support is positively related to user satisfaction on Facebook users.

H2: Social influence has an impact on usage satisfaction

2.4 *Perceived Usefulness and e-learning system success*

Davis' Technology Adoption Model (TAM) has become the most widely used theory for measuring the success of new technologies in terms of technology adoption and use (Sukendro et al. 2020). TAM is derived from the Theory of Reasoned Action (TRA) and has become part of social psychology theory. The TAM model shows that when users adopt new technology, they will be heavily influenced by internal and external factors. External factors include social factors, cultural factors, and political factors. Internal factors include perceived usefulness and perceived ease of use. Perceived usefulness and PEOU have a positive relationship to user satisfaction and successful adoption of three social networking sites (Pornsakulvanich, 2017). Testing the relationship between P.U. on user satisfaction has been carried out by (Hämäläinen et al., 2021) on 15-year-old Finnish adolescents regarding universal web-based acceptance. In his study, it was found that 82% of teenagers were quite active to very active in using the Youth Compass. The results showed that the P.U. perceived by the respondents was relatively high, so it impacted the perceived satisfaction of the program. Perceived use of the system is an important measure that affects the happiness and success of e-learning adoption (Ramadiani et al., 2017). Testing the relationship between P.U. on satisfaction and successful adoption of e-learning was carried out by (Nugroho et al., 2019). The consequence of his study is that satisfaction has an influential mediating role in the relationship between perceived usefulness and continued intention in e-learning adoption. Decision-making in adopting information systems such as e-learning needs to recollect numerous factors, including user satisfaction. This study

provides tips and proof that user satisfaction is quite significant in influencing the continuity of the use of e-learning

H3: Perceived Usefulness affects usage satisfaction

H4: Perceived Usefulness affects e-learning system success

2.5 *Usage satisfaction and e-learning system success*

Student satisfaction for usage e-learning has a beneficial effect on the overall performance effectiveness of e-learning (Al-Fraihat et al. 2020), then positively influences e-learning performance (Cidral et al., 2020; Montrieux et al., 2015). Cidral et al. (2018) conducted a study on the successful model of the e-learning system in Brazil. Their research concludes student satisfaction is a determinant of the success of using e-learning systems. In addition, they concluded that usage and user satisfaction positively impacted higher long-term benefits. The study results also show that the quality of the e-learning system and the quality of the information positively impact student satisfaction and the successful use of the e-learning system (Cidral et al., 2020).

H5: Usage satisfaction affects e-learning system success

3. Research Methods

This study uses a quantitative-deductive approach because it is based on a theoretical relationship between concepts and develops hypotheses tested in empirical studies. Data were obtained through a survey using a questionnaire. This study uses a survey approach because it pays attention to several factors that explain the phenomenon under investigation. The number of respondents is 250 students at a university in Yogyakarta, Indonesia. The criteria for the respondents are all students who are involved in the use of e-learning. The questionnaire was made based on a five-point Likert scale. Several research instruments were adopted from previous researchers. Social influence adopted the research instrument of Ouajdouni et al. (2021); Naveed et al. (2021). Satisfaction with using the tool produced by Hadullo et al. (2017), student computer anxiety from Zhang & Zhu (2021). The PU instrument adopted research indicators from Al-Fraihat et al. (2020). The data analysis technique uses a structural model with Partial Least Square software. Hypothesis testing is done by using the structural equation modeling (SEM) technique using Partial Least Square. This technique is used because of its ability to estimate the relationship of multiple interrelated dependencies, as well as to represent concepts that cannot be observed in the relationship, and to check for measurement errors in the estimation process (Hair et al., 2014).

4. Result

4.1 *Finding*

This study tested the e-learning success model with 250 student respondents. Descriptions of research respondents can be seen in Table 1.

Table 1: Descriptive Analysis Respondent

Respondent's description	%	Respondent's Description	%
Age:		Length of Using E-learning:	
<19 years old	57	<one years	10
19-22 years old	36	1-2 years	70
>22 years old	7	>Two years	20
Frequency of using the internet per-day:			
<5 Hours	25	Gender:	

Respondent's description	%	Respondent's Description	%
Age:		Length of Using E-learning:	
5-10 Hours	35	Man	52
>10 Hours	40	Woman	48

Source: Questionnaire Participants' Analysis

4.2 *Validity and Reliability*

In this study, a structural model based on the partial least-squares method was used. According to Hair et al. (2020); Hair et al. (2014), Partial Least Square analysis uses a two-step approach. The former focuses on the results of the measurement model (Outer model), and the latter on the results of the structural model (inner model). The Outer Model focuses on checking the validity and reliability of each indicator on its latent variables. The outer model was assessed using Convergent Validity, with the loading factor value > 0.7. However, a loading factor value from 0.5 to 0.6 is considered sufficient for tests at the early stages of the measurement scale development. In this study, a limiting factor of 0.7 will be used. Table 2 shows the results of the Convergent Validity test.

Table 2: Outer loading

	E-learning Success	Learner anxiety	P.U.	Social Influence	Usage Satisfaction
x11		0.775			
x12		0.782			
x13		0.719			
x21				0.823	
x22				0.842	
x23				0.862	
x24				0.883	
x31			0.823		
x32			0.889		
x33			0.841		
x34			0.857		
y11	0.810				
y12	0.805				
y13	0.850				
y14	0.777				
y15	0.787				
y16	0.763				
z11					0.793
z12					0.792
z13					0.799
z14					0.848
z15					0.698

Source: Questionnaire Participants' Analysis

Table 2 shows that all the instruments used in the study have an excellent convergent validity as they have a loading factor of 0.7. The discriminant validity test results in this study also have an excellent factor-loading value. It can be concluded that the discriminant validity of the tools used in this study is acceptable.

Table 3: Reliability test results

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
E-learning Success	0.887	0.889	0.914	0,639
Learner anxiety	0.639	0.630	0,803	0.576
Perceived Usefullness	0.875	0.880	0.914	0.727
Social Influence	0.875	0.878	0.914	0.727
Usage Satisfaction	0.845	0.846	0.890	0.620

Source: Questionnaire Participants' Analysis

Table 3 shows that the reliability test of the research instrument has good reliability. Reliability can be seen from the value of the loading factor, and each reliability criterion has a loading factor of 0.7 (Hair et al., 2014; Hair et al., 2020).

4.3 *Structural Models*

The results of the structural model test were carried out by observing the R^2 and GoF values. Based on the output of PLS 3.2.9, the results of the structural model test of this study can be seen in table 4. The relationship between the variables analyzed in the research model is presented in Figure 1.

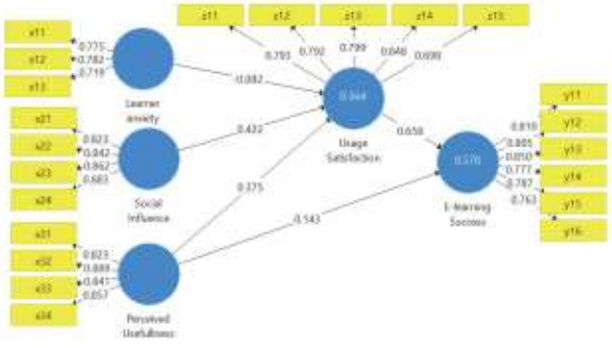

Figure 1: The Model of E-learning Success
Source: Questionnaire Participants' Analysis

Figure 1 shows the relationship between the variables that shape the success of e-learning adoption. Usage satisfaction shows the most significant influence on the success of e-learning adoption, and social influence also indicates a relatively high impact on usage satisfaction. In the condition of involuntary adoption, it turned out to increase the high level of saturation on the computer, so that it had an impact on user satisfaction. However, the effect was relatively minimal. P.U. has also not been able to influence the success of e-learning adoption directly. P.U. can affect success through mediating usage satisfaction first.

Table 4: The Structural Fit Model

	R^2	
	R Square	R Square Adjusted
E-learning Success	0.578	0.574
Usage Satisfaction	0.564	0.557

R^2
Predictive Relevance (Q-Square)
$Q^2 = 1 - (1 - R1^2)(1 - R2^2)$ $Q^2 = 1 - (1 - 0.578)(1 - 0.564)$ $Q^2 = 1 - (0.422)(0.436)$ $Q^2 = 1 - 0.184$ $Q^2 = 0.816$
The goodness of Fit (GoF)
GoF = 0.613

Source: Questionnaire Participants' Analysis

Table 4 shows the value of R^2 greater than 0.6, which means that the relationship between variables in the research model is powerful (Hair et al., 2014). The R^2 adjusted trust value is 0.557, meaning usage satisfaction moderate relates to Learner anxiety, Social Influence, and Perceived Usefulness. E-learning success has an Adjusted R^2 of 0.574, indicating that e-learning success has a good relationship with Learner anxiety, Social Influence, Perceived Usefulness, and usage satisfaction. Predictive relevance Q-square measures how well the observed values generated by the model and parameters are estimated. The Q^2 and GoF values are close to 1, indicating that the model has good predictive relevance. Based on the Q^2 and GoF calculations, the results are 0.816 and 0.613, meaning that learner computer anxiety, Social Influence, Perceived Usefulness, and usage satisfaction can predict e-learning success well. Table 4 also shows that the e-learning success model for students in the Special Region of Yogyakarta has an excellent model to be accepted.

4.4 *Hypothesis Testing Results*

The p-value is used to test the significance of the relationship between the variables of this study. The results of testing the relationship between variables using PLS-SEM can be seen in table 5.

Table 5: Mean, STDEV, T-Values, P-Values

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
H1:Learner computer anxiety → Usage Satisfaction	-0.082	-0.090	0.051	1.599	0.111
H2:Social Influence →Usage Satisfaction	0.422	0.425	0.071	5.965	0.000
H3:Perceived Usefullness →Usage Satisfaction	0.375	0.370	0.070	5.386	0.000
H4:Perceived Usefullness →E-learning Success	0.143	0.140	0.079	1.799	0.073
H5:Usage Satisfaction →E-learning Success	0.658	0.663	0.066	9.927	0.000

Source: Questionnaire Participants' Analysis

This study uses t-statistics, and the p-value is used to measure the significance level of the model. The significance value of the t-value used is 1.96 (5% significance level) and p-value <0.05. Table 5 shows that the hypothesis in this study has a significant relationship except for the relationship between learner anxiety and usage satisfaction (t-statistic = 1.599 and p-value = 0.111) and perceived usefulness to e-learning success (t-statistic = 1.799 and p-value = 0.073). On the other hand, a significant relationship is found in the hypothesis of perceived usefulness on usage satisfaction (t-

statistic = 5.386 and p-value = 0.000), social influence on usage satisfaction (t-statistic = 5.965 and p-value = 0.000), and usage satisfaction on e-learning success (t-statistic = 9.927 / p-value = 0.000). Overall, H2, H3, and H5 are supported, while H1 and H4 are not supported.

5. Discussion

The results of this study indicate that the e-learning success model is acceptable, but in this model, two paths have no significant effect. Learner computer anxiety has an insignificant negative impact on user satisfaction. This shows that students who use e-learning have not concerned about using this system. These students feel nervous, uncomfortable, and still feel confused in using this e-learning system. The involuntary adoption of e-learning and sudden changes in the learning process cause students to not enjoy online learning. Students are still groping about this online learning and have to change the way of learning ultimately. So that many students are surprised when faced with distance learning which has never been done so far. Students were also in shock because they had to change their college habits completely. This condition will reduce their success in adopting e-learning. This result can happen because e-learning has just been adopted since the Covid-19 pandemic in universities in the Special Region of Yogyakarta. This adoption forces students to adopt, even though the conditions do not meet the various e-learning system requirements. This effect is not significant, which means that there is a possibility that this effect may not occur. So, that in the e-learning success model, the impact of learner computer anxiety can be ignored. The direct consequence of P.U. on e-learning success is also not significant. P.U. affects the success of e-learning through user satisfaction. So, the students will be able to adopt e-learning if they are satisfied with the e-learning system.

The results of this study support the opinion of Nikolić et al. (2018); Li et al. (2015), which states that there is a positive relationship between e-learning success and social influence. Students are encouraged to adopt e-learning if there is support from friends in their environment. In some campuses, the implementation of e-learning is supported by experienced instructors to satisfy students with the assistance they receive. The readiness of the Faculty's e-learning staff also motivates students to like using e-learning. The effect of user satisfaction on e-learning success hypothesized in this study is supported. Many students who are satisfied with e-learning encourage them to complete all tasks that must be completed with e-learning facilities. Students feel comfortable in the e-learning system offered by each university. There is a positive perception of e-learning and considers e-learning very helpful in carrying out daily academic tasks. This study supports the findings of several previous researchers who stated that usage satisfaction had a good impact on overall e-learning performance Al-Fraihat et al., (2020); Cidral et al. (2020); Montrieux et al. (2015). These researchers show that use and user satisfaction positively impact higher long-term oriented benefits (Cidral et al., 2018). The study results also show that the quality of the e-learning system and the quality of information positively impact student satisfaction and successful use of the e-learning system.

6. Conclusion

The article must have a conclusion section. This study examines the e-learning system success model that connects learner variables computer anxiety, social influence, perceived usefulness, and usage satisfaction. Two hypotheses were found that were not significant. Learner computer anxiety has an insignificant negative effect on usage satisfaction. P.U. also has a negligible positive impact on e-learning system success. This study provides a theoretical contribution to the learner computer anxiety variable, which negatively influences usage satisfaction. In the condition that users face a situation that they must adopt, it turns out that anxiety does not significantly impact satisfaction with using an innovation (e-learning system). Users will quickly adapt to the online learning environment even if they have never used it before. The need to quickly adopt this new technology

breaks down the anxieties faced by users. In addition, respondents' students have the characteristics of being early adopters, with the following elements: young age and having a high level of education. Early adopters make it easier for students to adopt the new e-learning system. The perceived benefits that students feel in an e-learning do not necessarily affect their success in using e-learning. Students must first feel satisfaction with the e-learning they adopt before they succeed in the e-learning system at their university. Another contribution is related to social influence on usage satisfaction, which showed a significant positive effect in this study. The practical contribution of this research is associated with the relationship between social impact and P.U. on usage satisfaction. Higher Education managers should continue to provide encouragement and assistance to students in adopting e-learning. The campus assistance and support can accelerate the success of the e-learning system implemented by Higher Education. Besides, it is better if, in implementing the e-learning system, Higher Education managers provide mentoring and training to students to recognize how e-learning works and the benefits of e-learning quickly. Knowledge of e-learning can increase the perceived benefits of students. Increased PU can increase satisfaction and success in using e-learning. This study examines the success of e-learning from the inner side of users, namely students. The outer side of the user has not been observed in the success of e-learning. According to (Yekefallah et al., 2021); (Hassanzadeh et al., 2012); (Ouajdouni et al., 2021), the successful adoption of e-learning can be caused by the quality of the system, characteristics of the instructor, e-learning environment, service quality, and instructional design made by the Faculty. So for future research, it is better to explore the external influence of individuals that affect the success of e-learning. This study found an insignificant relationship between computer anxiety learners on usage satisfaction. Future research is expected to re-examine the effect of learner computer anxiety to justify the relationship between these two variables. Public Works in this study also does not directly affect the success of the e-learning system implemented in universities. Researchers should deepen the relationship between these two variables by researching the same setting, namely in students who are forced to adapt, to understand better the relationship between P.U. and the successful adoption of e-learning systems in universities.

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E-Learning System Success Adoption in Indonesia Higher Education
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