Technology Acceptance Model (TAM): Measurement Of E-Learning Use by Accounting Students at Malang State University

Abdul Khafit[1], Sulastri[2], Slamet Fauzan[3]
Faculty of Economics, Universitas Negeri Malang[1,2,3]
Jl. Semarang No.5, Sumbersari, Kec. Lowokwaru, Kota Malang, Jawa Timur 65145
Correspondence Email: slamet.fauzan.fe@um.ac.id

ABSTRACT

Based on the Technology Acceptance Model (TAM) theory, the use of e-learning is influenced by perceived usefulness, perceived ease of use by adding other factors, namely self-confidence and subjective norms. This study aims to determine: (1) The effect of perceived usefulness on the use of e-learning; (2) The effect of perceived ease of use on the use of e-learning; (3) The effect of self-confidence on the use of e-learning; (4) The effect of subjective norms on the use of e-learning. The Explanation Approach is used to explore the data in this study. The population in this study was the 2016 Accounting Education Bachelor Program students, amounting to 116 students. The number of samples in this study were 116 students. Collecting data in this study using a questionnaire with a Likert scale as a measure of research variables. Analysis of the data used is multiple linear regression. The results of this study indicate that the perceived usefulness, perceived ease of use, self-confidence, and subjective norms have a significant effect on the use of e-learning.

Keywords: Perception, TAM, Use of E-learning

INTRODUCTION

The use of information technology (IT) is inseparable from everyday life for teachers and students in the teaching and learning process, especially the internet. The abundance of information provided is a special attraction for its users, especially students in finding various information or to solve problems in learning assignments. This makes new discoveries in the world of internet-based education, one of which is e-learning. E-learning is a medium for the distance learning process that can be used as a supporting tool for the teaching and learning process and can cover several problems such as time and distance (Firmansya & Mehendra, 2004). According to Pawellangi (2009) e-learning is a learning medium that allows students to access materials at any time. The use of moodle e-learning is intended to develop increased learning flexibility. Students using e-learning can access learning materials at any time and repeatedly. In such a condition it can further strengthen the mastery of the learning subject by students.

Apart from the advantages mentioned above, the e-learning system will not function optimally if students do not understand how to use the system well. The key to the successful use of e-learning can be seen from the level of acceptance and use by students (Raaij & Schepers, 2008). Students as users can use e-learning to engage and participate in the learning process. The low intensity of e-learning usage by

students indicates a problem with e-learning acceptance. This makes it very important for practitioners and policy makers to understand the main factors that influence the use of e-learning systems to improve the learning experience of students.

Evaluating students' interest in using e-learning is very important for the success and sustainability of its use by students, lecturers, and universities. Several models have been used to explain user interest in using technology. One model is the Technology Acceptance Model (TAM), which was proposed by Davis (1985). TAM is a model that has often been used to explain the acceptance of a technology. In the TAM model, there are two factors that can influence technology acceptance, namely perceived usefulness and perceived ease of use (Davis, 1985 in Aristian, et al. 2016).

In addition to the factors contained in TAM, factors from within and outside the individual can also influence actions in using e-learning. In this study, the variables of self- confidence and subjective norms were added. This study took the research subjects of students of the S1 Accounting Education study program, State University of Malang. Therefore, this study aims to examine whether there is an effect of perceived usefulness, perceived ease of use, self-confidence and subjective norms on the use of e-learning by accounting education students.

Evaluating students' interest in using e-learning is very important for the success and sustainability of its use by students, lecturers, and universities. Several models have been used to explain user interest in using technology. One model is the Technology Acceptance Model (TAM), which was proposed by Davis (1985). TAM is a model that has often been used to explain the acceptance of a technology. In the TAM model, there are two factors that can influence technology acceptance, namely perceived usefulness and perceived ease of use (Davis, 1985 in Aristian, et al. 2016).

The perceived usefulness is the extent to which a person believes that using a particular technology will improve their performance (Davis in Aristian, et al. 2016). Based on this understanding, it can be interpreted that using e-learning can improve user performance and users will take advantage of e-learning if it is proven to be useful in their work. Jogiyanto (2007: 114) explains that the perception of usefulness is the most significant construct and can influence attitude, behavioral intention, and behavior in using technology than other constructs. Based on this, perceived usefulness is one of the factors that can influence the use of e-learning

Perceived ease of use is the extent to which a person believes that using a certain technology will be free from effort (Davis in Aristian, et al., 2016). Ease of use of e-learning is also a factor that can influence users to access e-learning. Venkatesh and Morris (2000) say that perceived ease of use has an impact on behavioral interest (intention). The easier e- learning to use will mean it is potentially easier to increase the use of e-learning by users.

Ali Tarhini, et al (2017) have previously conducted a similar research using Structural Equation Modeling Approach (SEM) analysis. Samples of data from two universities in England with data collection using a cross-sectional in his research found that perceived usefulness is proven to affect the use of e-learning and perceptions of ease of use also affect the use of e-learning. Other research has also been conducted by Richard Boateng, et al., Using the Technology Acceptance Model (TAM) with Structural Equation Modeling Approach (SEM) analysis. The data sample from 337 respondents

at Ghana University obtained the results of the perceived usefulness which was proven to affect the use of e-learning, while the perception of ease of use was not proven to affect the use of e-learning.

Other research has also been conducted by Michael A, et al (2016) conducted at Atma Jaya Yogyakarta University as many as 293 students as respondents with the multiple regression method, it was found that the perceived usefulness was proven to affect the use of e-learning, while the perception of ease of use was not proven to affect the use of e-learning. Based on several previous studies that have been carried out using the TAM technology acceptance model on the use of e-learning, different results are obtained between studies, so based on this, this study aims to test the applicability of the TAM model which consists of perceived usefulness and perceived ease of use in influencing. the level of use of e-learning technology which is carried out by students of State University of Malang, by adding intrinsic and extrinsic factors. These factors include self-efficacy and subjective norms.

State University of Malang (UM) as a demolition of higher education which has a direct mandate from the government to develop the world of education continues to innovate in supporting the quality of curriculum and learning in Indonesia. Several innovations have been carried out by UM, one of which is the online learning system (SIPEJAR) using e- learning to support face-to-face and online lectures. To support this, UM has added wifi facilities throughout the Malang State University campus area with a bandwidth of 2400 mbps. After this implementation, there is a need for evaluation and consideration for future development so that it can provide an effective way.

The theoretical framework in this study uses the theory of Davis (1989), namely the Technology Acceptance Model (TAM), which explains the acceptance of an information system consisting of perceived usefulness and perceived ease of use. This study adds another factor, namely self-confidence and subjective norms.

The Effect of Usability Perceptions on the Use of E-learning in Accounting Students Usability perception is one of the factors of the Technology Acceptance Model (TAM) theory proposed by Davis. Perceived usefulness is indeed related to the acceptance of an information system. David (1989) explains that perceived usefulness has a stronger and more consistent relationship with information systems. The perceived usefulness in this research is an assumption about how far e-learning can be useful for users. With this utility, it can also be interpreted that the system provides meaningful uses for its users and the use of the e-learning system is not in vain. the benefits obtained from the use of e-learning are effectiveness in learning, supporting learning etc. This can provide added value to the e-learning system which can make someone use e-learning. The more benefits that are obtained from the use of e- learning by users, the more students use e-learning. Thus, the hypothesis formulated in this study are.

H1: Usability perception has a significant effect on the use of e-learning.

The Effect of Perceptions of Ease of Use on the Use of E-learning in Accounting Students
Another factor of the Technology Acceptance Model (TAM) theory is the perceived ease of use. Perceived ease of use is a person's level of ease with regard to the use of information systems. Jogiyanto (2007) states that if a system can be used easily, the effort required is not too high and vice versa. Ease of use of the e-learning system will reduce

effort, both in one's time and energy in studying and doing assignments. Ease gives an indication that someone who uses information technology works more easily than someone who works without using information technology or manually. The use of e-learning makes learning easier for someone because it is more easily accessible via mobile for 24 hours. Thus, the hypothesis formulated in this study are.

H2: Perceived ease of use has a significant effect on the use of e-learning

The Effect of Self-Confidence on the Use of E-learning in Accounting Students
In the context of information systems, self-confidence is defined as an individual's ability to use computer systems to fulfill tasks. An individual who feels that the ability to use computerization is high tends to use it more often for things that are considered to be done with the computer. Self- confidence is the most important predictor that directly affects the use of information systems (Yunasti & Baridwan, 2013). Students with high self-confidence will feel confident in their competence so that they can use e-learning for learning needs and doing assignments and can achieve expected results such as high scores. Likewise, students with low self-confidence feel less confident about their competence in using e-learning for learning needs or doing assignments and these students tend not to use the technology or manually. Thus, the hypothesis formulated in this study are.

H3: Self-confidence has a significant effect on the use of e-learning.
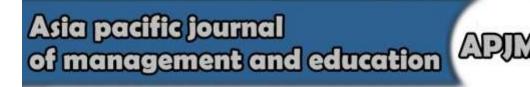
The Effect of Subjective Norms on the Use of E-learning in Accounting Students
Subjective norms are one of the factors in Ajzen's theory of planned behavior. Subjective norm is a situation where there is social influence to do or not do something. A person does not fully perform or does not carry out a behavior or action is purely formed in oneself but is impulse obtained from outside oneself. This subjective norm is one of the conceptual effects of the environment. For students, the closest people who can be influential in using or not using e- learning are lecturers and friends. In this case, the greater the encouragement that students receive in using the e-learning system, the more likely users are to use e-learning. Thus, the hypothesis formulated in this study are.

H4: Subjective norms have a significant effect on the use of e-learning

RESEARCH METHOD

The use of this quantitative explanation research method aims to explain and provide reasons for the cause of a phenomenon and is based on a theory or hypothesis (Wijaya, 2013: 2). The population used in this study were all students of the S1 Accounting Education study program, State University of Malang, batch 2016, 2017 and 2018. The sampling technique used was Simple Random Sampling. To obtain the necessary data, researchers used a questionnaire distributed to 194 respondents consisting of 53 male students and 141 female students.

The research instrument used to obtain data in this study using a questionnaire or questionnaire. The form of statements in the questionnaire or questionnaire in this study is structured asking or called a closed direct questionnaire and the type of positive questions. The scale used in the questionnaire is an ordinal or Likert scale. The Likert scale according to Sekaran (2015: 31) is used to examine subjects agree or disagree with statements on a 5-point scale, namely strongly disagree (1), disagree (2),

disagree (3), agree (4), strongly agree (5).

The type of data used in this research is quantitative data, namely data or information expressed in numerical units, discrete (whole / whole), or continuous (fraction / interval) (Wijaya, 2013: 20). The quantitative data that is considered in this research is data obtained from the results of a questionnaire or questionnaire to measure the perceived usefulness variables, perceived ease of use, self-confidence, subjective norms, and the use of E-learning that has been distributed to respondents.

Data Analysis

This study uses four independent variables, namely perceived usefulness (X1), perceived ease of use (X2), self-confidence (X3), subjective norms (X4), and the dependent variable using e- learning (Y). The population in this study were all students of the 2017 S1 Accounting Education study program, State University of Malang with a total of 116 students, and a sample of 116 students.

Test Research Instruments

All instruments used in this research must go through the instrument test stage first. The results of the validity test show that all statement items for each variable are valid. While the results of the reliability test of each variable were: reliability pressure of 0.734; opportunity reliability of 0.883; rationalization reliability of 0.827; and the reliability of academic cheating behavior is 0.873.

Hypothesis testing

Hypothesis testing in this study was carried out using multiple linear analysis. Priyatno (2009:137) states that this analysis is useful for analyzing the linear relationship between two or more independent variables with one dependent variable. The following is the result of multiple linear regression analysis.

Multiple Linear Regression Analysis Test Results

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	1,018	1,290		.789	.432
PERCEPTION_USA	.362	.082	.377	4,435	.000
PERSEPSI_KEMUDAHAN_PENGGUNAAN	.214	.088	.205	2,440	.016
SELF CONFIDENCE	.219	.097	.181	2,264	.026
NORMA_SUBYECTIVE	.143	.069	.176	2,072	.041

(Source: Attachment of t Test Results)

Based on the data above, it can be concluded that the constant value is 0.955, meaning that if the perceived usefulness, perceived ease of use, self-confidence, and subjective norms are 0, then the use of e-learning is 0.955. The coefficient value of the

perceived usefulness variable is 0.343, meaning that if the perceived usefulness increases by 1 unit, the use of e-learning will increase by 0.343 assuming other independent variables have a fixed value. The coefficient value of the perceived ease of use variable is 0.143, meaning that if the perceived ease of use increases by 1 unit, the use of e-learning will increase by 0.143 assuming other independent variables have a fixed value.

The coefficient value of the self-confidence variable is 0.356, meaning that if self-confidence has increased by 1 unit, the use of e-learning will increase by 0.356 assuming other independent variables have a fixed value. The coefficient value of the subjective norm variable is 0.137, meaning that if the subjective norm increases by 1 unit, the use of e-learning will increase by 0.137, assuming other independent variables have a fixed value.

RESEARCH AND DISCUSSION

The Effect of Usability Perceptions on the Use of E-learning
Based on the results of hypothesis testing in chapter IV, it can be explained that the perceived usefulness has a significant positive effect on the use of e-learning for undergraduate students of Accounting Education class of 2015. This shows that the better the perceived usefulness of students towards e-learning, the more often students use e-learning. Likewise, on the contrary, the lower the students' perceived usefulness of e-learning, the lower the use of e- learning.

Students who have a high perceived usefulness will type themselves to believe that using e-learning will improve their performance. This means that students who think that e-learning brings many benefits when used, will often use e-learning. Students using e-learning will feel the benefits of e-learning which can be accessed easily by using the internet network at any time without being limited by distance, and time and students can study or repeat teaching materials at any time because e-learning can store material in the form of a data base. This is in line with the concept of Technology Acceptance Modeling (TAM) proposed by Davis (1989) which states that perceived usefulness is one of the factors that influence a person to use a technology.

The Effect of Perceived Ease of Use on The Use Of E-Learning
Based on the results of hypothesis testing in chapter IV, it can be explained that the perceived ease of use has a significant positive effect on the use of e-learning for undergraduate students in Accounting Education class of 2015. This shows that the better the perceived ease of use by students towards e-learning, the higher the students who use e-learning. - learning. Likewise, on the contrary, the lower the perceived ease of use by students towards e- learning, the lower the use of e-learning.

Pranidana (2011) me real right that ease of use will reduce a person's time and energy in learning information technology. Students will use e-learning if the e-learning system is easy to use and users do not need a lot of effort to use it. Students who have a high perceived ease of e-learning will tend to use e-learning more often. This is in line with the concept of the Technology Acceptance Model (TAM) put forward by Davis (1989) which states that the perception of ease of use is one of the factors in using technology.

The Effect of Self Confidence on the Use of E-learning

Based on the results of hypothesis testing in chapter IV, it can be explained that self-confidence has a significant positive effect on the use of e- learning for undergraduate students of Accounting Education class of 2015. This shows that the higher the student's self- confidence, the higher the use of e-learning by students. Conversely, the lower the student's self-confidence, the less e-learning is used by students.

Students who have high self-confidence will feel confident in themselves to be able to use technology well. Individuals with a higher level of self-confidence rated themselves as being able to complete computational tasks that were given better without the support and assistance of others, than someone with a lower level of self-confidence (Adamson and Shine, 2003: 446). High self-confidence in individuals will lead to a higher level of interest and use of technology. The high level of self-confidence in students will further increase the use of e- learning itself. So that students are sure they can use e-learning well, they will often use e- learning. Likewise, students with low self-confidence usually feel that they have not been able to use a technology properly. In addition, this person will solve problems independently either by using manual methods or by learning to use technology so that they can use them. although students who have low self-confidence these students have the potential to use e-learning for learning media. The results of this study are in line with the research hypothesis which states that there is a significant positive effect on self-confidence on the use of e-learning.

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

Based on the hypothesis testing in chapter IV, it shows that subjective norms have a significant positive effect on the use of e-learning in 2015 undergraduate students of Accounting Education. That is, it shows that students will use e-learning if the student has subjective norms or encouragement from someone who is trusted enough. big. Students who have high subjective norms will do something when other people or trusted sources say to do certain things. Meanwhile, students with low subjective norms tend not to do certain things.

Subjective norms relate to external factors, in this case the influence of other people who are considered important, both the status of that person and the suggestions of those around them that can be taken into consideration by students in deciding to use e-learning. Social referrals are in the form of good advice from the surrounding environment from lecturers and fellow students from people on campus. This affects students to use e-learning because it directly or indirectly provides a stimulus for students to use e-learning. This is in accordance with the concept of planned behavior theory that has been developed by Ajzen (1991) and developed by Hamzah (2009) in Hidayati (2014) which states that theory planned behavior is a theory that discusses one's planned behavior in the utilization and use of money information system technology. based on three things, one of which is subjective norms. The more individuals pay attention that their social reference is more recommended to do something, the individual will tend to feel pressure to do this pressure (Ajzen, 2006). It can be concluded that the greater the influence of other people around students, both lecturers and student friends in using e-learning, will make students feel confident about using e-learning. The results of this study are in line with the research hypothesis which states that there is a significant effect of subjective norms on the use of e-learning in 2015 students of S1 Accounting Education.

CONCLUSIONS

Factors affecting the use of e-learning are based on the theory acceptance model (TAM) which consists of perceived usefulness and perceived ease of use, with added self-confidence factors and subjective norms. The results of the study prove that perceived usefulness, perceived ease of use, self-confidence, and subject matter norms have a significant positive effect on the use of e-learning in students of the 2015 Accounting Education undergraduate study program.

Based on the results of research conducted, the value of R square or the coefficient of determination shows that the effect of perceived usefulness, perceived ease of use, self-confidence, and subjective norms on the use of e-learning is only 56%, then the remaining 44% indicates other factors that influence use of e-learning. Not all of the courses taken by students use e-learning facilities, so the results of the research are not in depth.

Students are expected to give more positive responses to the direct or indirect socialization given by lecturers and the campus, especially regarding e-learning so that students can find out the advantages and disadvantages of e-learning, so that it can be taken into consideration for students to use e-learning. as a learning medium effectively. The need for e-learning development is expected to develop e-learning by making features that are more detailed so that it is easier to operate by users. For further research, the variables used in this study do not fully explain the factors that influence the use of e-learning. It is hoped that it can pay more attention to other factors that affect the use of e-learning, both those that come from within oneself or internal factors or from the environment or external factors. In addition, the respondents used can be expanded not only in one scope, and can add data collection techniques using interviews and observations so that the data obtained can be more in-depth.

REFERENCES

Adamson, I., & Shine, J. (2003). Extending the New Technology Acceptance Model to Measure the End User Information Systems Satisfaction in a Mandatory Environment: A Bank's Treasury. Technolgy Analysis & Strategic Management. Vol. 15 No. 4: pp 441-455

Ajzen, I. 2006. *The Theory Of Planned Behavior*, (Online), (http://people.umass.edu/aizen/tpb.html), diakses 11 maret 2019.

Aristian, dkk. 2016. *Faktor Yang Mempengaruhi Niat Penggunaan E-learning Oleh Mahasiswa Pada Universitas Atma Jaya Yogyakarta.* Seminar nasional teknologi informasi dan komunikasi 2016 halaman 322.

Boateng, R. 2016. Determinant of *e-learning* adoption among student of developing countries. (Online), dalam jurnal hasil riset (http://www.emeraldinsight.com/2046-469X.htm) diakses 12 Juni 2019.

Davis, F.D., 1989. *Perceived usefulness, perceived ease of use, and user acceptance of information technology.* MS Quarterly, (Online), Vol. 13 iss 3, pg. 318. http://www.cba.hawaii.edu/chismar/ITM704/DavisTAM1989.pdf.

Jogiyanto. 2007. *Sistem Informasi Keprilakuan.* Yogyakarta:CV Andi Offset. Mustaqim. 2008. *Psikologi Pendidikan.* Yogyakarta:Pustaka Pelajar.

Raaij, E. M, and Schepers. 2008. *The acceptance and use of a virtual learning environment in china. Computers dan education 50;838-52*

Sekaran, Uma. 2015. *Research Methods For Business Metodologi Penelitian Untuk*

Bisnis. Jakarta:Salemba Empat

Tarhini, dkk. 2017. Factors influencing students' adoption of *e-learning*: a structural equation modeling approach. (Online), dalam jurnal hasil riset (http://www.emeraldinsight.com/2046-469X.htm) diakses 04 Desemeber 2018.

Universitas Negeri Malang. 2017. *Pedoman Penulisan Karya Ilmiah: Skripsi, Tesis, Disertasi, Artikel, Makalah, Tugasakhir, Laporanpenelitian (Edisi 2017)*. Diterbitkan oleh Universitas Negeri Malang