

# Factors influencing accounting students in acceptance of e-learning

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**ABSTRACT:** This study aims to examine and obtain empirical evidence of the influence of variables consisting of System Characteristic (system interactivity, technical support, & screen design) and Individual Differences (subjective norms, internet experience, & computer self-efficacy) on an e-learning acceptance of accounting students at University of Surabaya. This study used data for a period of implementation of e-learning system with 152 observations. The results of this study indicated that in general, the system characteristic has no significant effect on the acceptance of e-learning than individual differences.

*Keywords:* technology acceptance model, system characteristics, individual differences

## 1 INTRODUCTION

E-learning has become the attention of many institutions in many countries. In higher education institutions, e-learning has opened up a new horizon in teaching and learning methods. While in the private sector, e-learning is able to assist the process of improving the competence of employees in the company. The e-learning market research conducted by Kopf (2007) shows that 60% of e-learning is already implemented in the United States, Europe at 15%, and the remaining 25% in Asia which was still growing at 30% in 2010.

Based on the research that was done by Dahawy et al. (2005), the use of information and communication technology in accounting teaching will improve accounting competencies. Crandal & Philips (2002) in Dahawy et al. (2005) revealed in their research that the use of web-based learning for accounting students has improved understanding of Accounting Cased Based Learning.

The use of e-learning to teach International Financial Reporting Standards (IFRS) has been done by Deloitte and various universities in the world, this has been in line with the direction of the American Institute of Certified Public Accountants (AICPA). AICPA states that the core competency framework of accounting education should refer to the mastery of information technology.

The results of a survey conducted by AIISP (Association of Indonesian Internet Service Providers) in 2016 revealed that internet users in Indonesia based on age level are as follows: first rank of internet users with the age ranging from 25 years to 34 years is 75.8%, the second rank of internet users with the age ranging from 10 years up to 24 years is 75.5%, and third rank of internet users with the age ranging from 35 years to 44 years is 54.7%, the rest are internet users with the age over 45 years old reaching 19.2%. We can conclude that internet users

in the age range between 10 years to 24 years have a great potential for e-learning.

Although e-learning has a great potential, there are still many institutions that do not succeed in implementing it. The lack of implementation of e-learning is caused by several factors. A study conducted by Woodill (2004) reveals that the failure of e-learning is caused more by human factors rather than tools, software, and infrastructures. A research conducted in 2000 by Forrester Group showed that most workers (more than 68%) refused to attend e-learning training.

Technology Acceptance Model (TAM) can be used to describe the variables that affect the acceptance of technology, including the utilization of e-learning. This model was first proposed by Davis (1989) and is further widely used in research related to technology acceptance. Abbad (2011) reveals that TAM was chosen as a conceptual framework in determining the factors that affect the acceptance of e-learning systems with the following arguments: TAM has a lot of empirical evidence in explaining the acceptance of technology; previous studies have argued that TAM is an appropriate model in describing student acceptance of technology acceptance over a period of time; TAM has been widely used in IT adoption studies; TAM has been the theoretical basis of various empirical studies and has major implications; and researchers have used TAM to understand the use of websites that have similarities with e-learning.

These phenomena are the basis of this research on the factors that affect the acceptance of e-learning on accounting students in the University of Surabaya.

## 2 LITERATURE REVIEW

The technology acceptance model used in this research was the extension model, which is the basic

TAM model that has been added with external variables such as System Characteristics and Individual Differences (Hong, 2002). The development of TAM for e-learning acceptance has been done by Abbad (2011) by including external variables. The extension model was chosen because it is suitable with the type of this research that gives an overview of e-learning acceptance model of Accounting Department, the University of Surabaya influenced by external variables Individual Differences and System Characteristics. This extension model has been used in various research acceptance of e-learning which becomes the reference of this research.

This study used the external variables on the basic model of TAM, i.e., Conceptual Design (IE), System Interactivity (SI), Computer Self Efficacy (CSE), Screen Design (SD) and Technical Support (TS) model of the factors that influence e-learning adoption from the Abbad study (2011). Based on the Hong (2002), the external variables can be divided into 2 categories, System Characteristics and Individual Differences.

### 2.1 *System Characteristics*

System Characteristics are external variables capable of influencing users to adopt information systems against perceived ease of use (PEOU) and perceived usefulness (PU). System characteristics related to the acceptance of technology based on the conceptual adoption model of e-learning from Abbad (2011) are System Interactivity in e-learning consists of discussion forums, chat systems, and e-mail.

Interaction is divided into 2 things: asynchronous and synchronous. Asynchronous interaction is not limited by time and place, lecturers and students can discuss in unlimited time (Abbad, 2011). While synchronous interaction requires students and lecturers to interact based on the provisions of time that has been mutually agreed. In a study conducted by Poon et al. (2004) the value of students significantly correlates to interactivity in e-learning.

Therefore, interactivity system becomes one of the factors that influence the adoption of e-learning system for students. Technical Support in e-learning has an important role in the acceptance of technology based on a study conducted by Selim (2003). In a study conducted Selim (2007) showed that the use of e-learning influenced positive attitude and technical support (technical support) of technology and tools. In this case, technical support has a major contribution to the effectiveness of e-learning. Ngai et al. (2007) in the study of TAM development concluded that technical support had a significant impact on perceived ease of use and perceived usefulness in e-learning. According to Jogiyanto (2007) and Hong

(2002), the design of the screen shows how the information is displayed on a computer screen. The result of Hong research (2002) shows that screen design variable has a significant influence on perceived ease of use variable but not perceived usefulness. Sutanto (2009) concluded that the screen design does not affect perceived usefulness and perceived ease of use the use of online information systems significantly.

### 2.2 *Individual Differences*

Individual Differences consists of several components. Subjective norms are the perceptions or views of a person against the beliefs of others that will affect the interest to perform or not to conduct the behavior under consideration (Jogiyanto 2007). Park's (2009) study shows that subjective norms play an important role in attitude toward e-learning and behavioral intention to use e-learning. Subjective norms, in this case, are external motivating factors that influence students in using e-learning in the learning process.

While Abbad (2011) incorporated the Subjective Norm as part of the independent variable in TAM developed for e-learning. According to Hong (2002) and Jogiyanto (2007) computer self-efficacy is a judgment of a person's ability to use a technology. The results showed that computer self-efficacy has a significant positive effect on perceived ease of use. Lee (2006) concluded that computer self-efficacy is the key to the PEOU, but has no significant correlation to PU.

Park's (2009) study shows that computer self-efficacy has an important role in attitude towards e-learning and behavioral intention to use e-learning. Dishaw et al. (2002) show that computer self-efficacy variables are widely used in studies of academic performance in technology-based learning. The study of Sutanto (2009) concludes that self-efficacy computer has a significant influence on perceived ease of use of users of the online information system.

The predecessor's experience has an important role in the individual acceptance of information technology (Abbad 2011). Liaw et al. (2007) explained that the experience of internet usage affects user attitudes toward successful e-learning implementation. This is supported by research by Poon et al. (2004) which reveals that significant internet usage experience on e-learning acceptance.

### 3 RESEARCH MODEL AND HYPOTHESES

The research model and analysis of this study can be seen in Figure 1, where this model is built based on previous empirical theory and research.

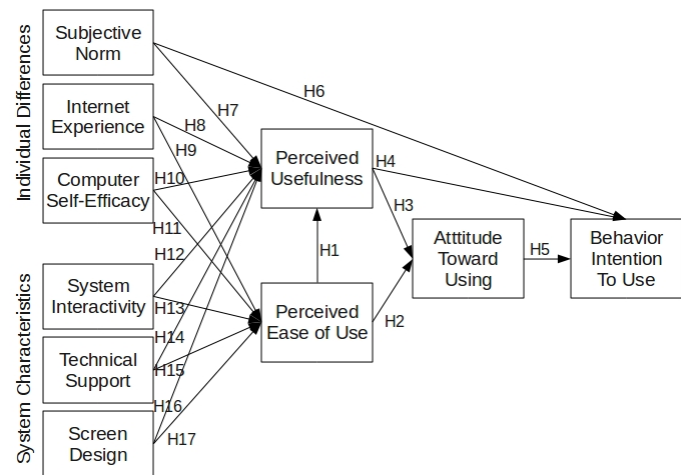


Figure 1. The Development of TAM Model with External Variables for Acceptance of e-learning system.

Based on the formulation of the problem, the theoretical basis, conceptual framework, and research model along with the factors that affect the acceptance of e-learning technology consisting of System Characteristics and Individual Differences, the hypothesis of this study are as follows: Perceived Ease of Use (PEOU) has a significant influence on Perceived Usefulness (H1) and Attitude Toward Using (H2). Perceived Usefulness (PU) has a significant influence on Attitude Toward Using (H3) and Behavioral Intention to Use (H4). Attitude Toward Using (ATU) has a significant influence on Behavioral Intention to Use (H5). Subjective Norms (SN) has a significant influence on Behavioral Intention to Use (H6) and Perceived Usefulness (H7). Internet Experience (IE) has a significant influence on Perceived Usefulness (H8) and Perceived Ease of Use (H9). Computer Self-Efficacy (CSE) has a significant influence on Perceived Usefulness (H10) and Perceived Ease of Use (H11). System Interactivity (SI) has a significant influence on Perceived Usefulness (H12) and Perceived Ease of Use (H13). Technical Support (TS) has a significant influence on Perceived Usefulness (H14) and Perceived Ease of Use (H15). Screen Design (SD) has a significant influence on Perceived Usefulness (H16) and Perceived Ease of Use (H17).

The total number of students as users of e-learning system in 201x were estimated to reach 500 students and taken a sample of 152 undergraduate accounting students from the total population of e-learning users. Data processing was done by confirmatory factor analysis (CFA) test, Outlier Uni-

variate and Multivariate test, normality test, and path analysis.

### 4 RESULTS AND DISCUSSION

Path Diagram is made according to modeling that has been prepared based on theory. The Path Diagram, is created on the AMOS worksheet. From the Path Diagram it is known that the value of chi-square is 900.560. The chi-square probability value that is not significant at the 5% confidence level (P value  $\geq 0.05$ ) states that the goodness of fit model is good. The value from model displayed in Table 1 along with a summary of hypothesis test results related to the overall model.

Table 1. Summary of Hypothesis Test Results of the Entire Model

H	Description	P-Value	Est.	Result
1	PEOU → PU	0.021	0.349	accepted
2	PEOU → ATU	***	0.389	accepted
3	PU → ATU	***	0.674	accepted
4	PU → ITU	0.856	-0.047	rejected
5	ATU → ITU	0.002	0.647	accepted
6	SN → PU	***	0.658	accepted
7	SN → ITU	0.035	0.360	accepted
8	IE → PU	0.130	-0.131	rejected
9	IE → PEOU	***	0.312	accepted
10	CSE → PU	0.886	-0.023	rejected
11	CSE → PEOU	***	0.530	accepted
12	SI → PU	0.832	-0.017	rejected
13	SI → PEOU	0.974	0.003	rejected
14	TS → PU	0.036	0.174	accepted
15	TS → PEOU	0.550	0.053	rejected
16	SD → PU	0.375	-0.072	rejected
17	SD → PEOU	0.109	0.134	rejected

Hypothesis testing is done by comparing the probability significance (p) with a predetermined level of significance ( $\alpha$ ) of 0.05. If the probability ratio of significance (p) is smaller than the significance level ( $\alpha$ ), then the proposed hypothesis is acceptable, whereas if the probability value of significance (p) is greater than the significance level ( $\alpha$ ), then the hypothesis is rejected. The red color indicates significance at the 1% level and the blue color indicates significance at the 5% level. The estimated value shows the influence between the estimated variables. The positive sign of the estimate indicates a unidirectional relationship and a negative sign indicating an opposite relationship.

## 5 CONCLUSION

Overall, individual differences as constructs formed by the dimensions of subjective norms, internet experience, and computer self-efficacy have a significant effect on the acceptance of e-learning systems. The development of e-learning system in the future should continue to pay attention to the characteristics of the users. The introduction and explanation of the benefits of e-learning should be given to accounting students since the first semester. It aims to build a positive perception for the students so that will intensively utilize e-learning in order to support its academic success.

System characteristic as a construct formed by the dimensions of system interactivity, technical support, and screen design, has no significant effect on the acceptance of e-learning system. This does not mean there is no need to improve the quality of existing e-learning systems. Perceptions of ease and benefits of using e-learning system should also be supported by improving the quality of infrastructure. In addition, the existence of technical support became one of the key roles in the successful acceptance of e-learning system.

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