

Conference Paper

Students' Intention to Participate in E-learning

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Abstract

This study seeks to investigate the effect of controllability and responsiveness on the perceived ease of e-learning use. This study also aims to determine the relationship between the perceived ease of e-learning use and the student's intention to participate in e-learning. This study extends the technology acceptance model by considering the external factors; controllability and responsiveness of e-learning system. Thirty-one students from Bung Hatta University were selected as research objects for this study, and three hypotheses were developed. SEM-PLS was applied to analyze the data and smart-pls 3.2.7 software was used to reject the null hypotheses. Having had a satisfied convergent and discriminant validity, this study demonstrates that the controllability and responsiveness of an e-learning system does not have a significant effect on the perceived ease of e-learning use. However, the relationship between the perceived ease of e-learning use and the students' intention to participate in e-learning is significantly positive. The practical and theoretical implications are discussed in this paper.

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1. Introduction

Information and communication technology revolution has been driving a remarkable economic and social change [1]. In fact, [1] adds the network and internet development, as modern communications backbone, has turned the world into ever-present connectivity. These changes also provide us with new ways of learning, such as e-learning [2]. The development of information and communication technology (ICT) has been giving a significant opportunity to higher education institution [3] to support the learning process, such as e-learning. [4] proposes the definition of e-learning as a tool utilizing computer network technology such as internet, intranet and extranet to transmit learning instruction to users. In addition, [5] define e-learning as an information system that can consolidate an extensive diversity of learning material (through text medium, audio, and video) communicate through online discussions, forums, live chat sessions, e-mails, assignments and quizzes. E-learning incorporates learning; that is fully reliance

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on the e-learning system, as well as blended learning [6]. Further, [6] argue that e-learning system provides the learning chances that are exempted from the limitation of place and time, and promote new teaching and learning oncoming. Thus, e-learning enables lecturers to transmit learning material via texts, images, animation videos and audios [2]. Even though there is a significant investment in e-learning system in both developed and developing countries, the usage level of these systems by lecturers and their students are often modest [7], including at Bung Hatta University [8]. The e-learning behavior adoptions among students are still being questioned, and the central research question regarding to the usage level of e-learning deals with why it happens.

Theoretically, there are several theories explaining the technology adoption behavior among individual: theory of reason action [9], theory of plan behavior [10], task-technology fit [11], technology acceptance model [12] and the unified theory of acceptance and use of technology [13]. The previous research has been done by several authors [2], [3], [6], [8], [14]– [19]. Based on the previous studies, most of studies were conducted outside Indonesia environment, except [8]. However, [8] used lecturers as research object and focused on external factors of technology acceptance model (TAM). Furtherly, studies on the combination of external factors of TAM and TAM's variables from student perspective are still limited. In addition, Universitas Bung Hatta's academic affair reported that only 75% students (in average) participated in e-learning recently. There is about 25% not participating in e-learning. Based on that research problem, the research question is why some student intent to participate in e-learning and other student does not. Therefore, this study aims to investigate the effect of controllability and responsiveness on perceived ease of use. Besides, this study also determines the relationship between perceived ease of use and intention to participate on e-learning. The research framework is shown in Figure 1

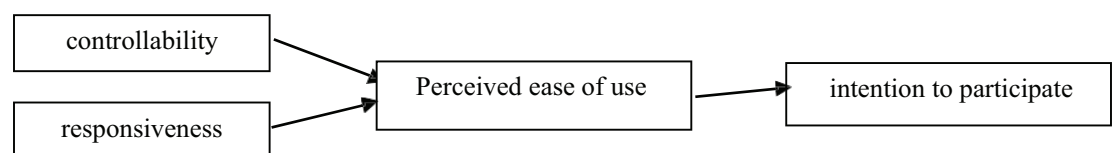


Figure 1: Research Framework

In the context of e-learning, [20] defines controllability as ability of students to control the timing, stream and content of communication by means of learning system. The students will believe the system of electronic learning is more ease of use if they perceive that it is manageable [21]. In addition, [21] states that responsiveness is the reaction to e-learning system characterized as fast, reasonable and consistent. It means the students will be aware that e-learning system is ease of use if they recognize that

e-learning system has those characteristics [21]. Finally, e-learning system will increase the students' intention to use it if it is controllability and responsiveness. Previous study that supports these contentions is [20]. Based on the explanation above, we develop and propose three hypotheses as follows.

H1: controllability has a positive effect on perceived ease of use (PEU)

H2: responsiveness has a positive effect on perceived ease of use (PEU)

H3: perceived ease of use (PEU) has a positive relationship with intention to participate in e-learning

2. Method and Material

This study uses descriptive research, involving collecting data in order to test hypothesis or to answer questions concerning the current status of the object being studied. Thirty-one students from few departments at Bung Hatta University participated in this study. Primary data were collected via online survey. Intention to participate in e-learning has three items developed by [22] and [23]. In addition, controllability consists of three items [24] and [25]. Furthermore, responsiveness is also concerned with three items [21], [24] and [26]. Five-scale Likert (1 = strongly disagree, 2 = disagree, 3 = neutral, 4=agree and 5=strongly agree) was used to measure the constructs. To analyze the data, the researcher applied structural equation model with partial least square (SEM-PLS). PLS-SEM models are path models in which some variables may be effects of others while still be causes for variables later in the hypothesized causal sequence, and in this study, smart-PLS 3.2.7, a kind of statistical modeling package for partial least squares analysis, was used to reject or accept hypotheses. The hypotheses are rejected or accepted based on the path coefficient and p-value [27].

3. Findings and Discussions

The number of sample involved in this study was thirty-one students. As shown in Table 1, female students were twenty-six students (83.87%) and only five male students (16.13%) participated in this study. Regarding to the student's age, respondents were dominated by those with age of 21 to 22 years old (67.74%). Then, most of respondents were in the semester 4th to sixth (93.55%). According to the respondents' department, 83.87% of students were in the accounting department.

The First assessment of smart-PLS used in this study was measurement model assessment. There were two kinds of validity while assessing the measurement model:

TABLE 1: Demographic Variables

Demographic data	Category	Number	%%
Gender	Female	26	83.87
	Male	5	16.13
Age	19 to 20 years old	6	19.35
	21 to 22 years old	21	67.74
	23 to 24 years old	3	9.68
	> 24 years old	1	3.23
Semester	4th to 6th	29	93.55
	7th to 9th	1	3.23
	> 9th	1	3.23
Department	Accounting	26	83.87
	Elementary School Teacher Education	1	3.23
	Management	2	6.45
	English Education	2	6.45

convergent validity and discriminant validity [27]. Convergent validity consists of four statistic properties being assessed: outer loading, Cronbach’s Alpha, composite reliability and average variance extracted (AVE). The result of outer loading can be seen in Figure 2 where all items for four constructs has outer loading greater than 0.7 [28]. In addition, Cronbach’s Alpha, and composite reliability have satisfied value, > 0.700 [29]. Finally, average variance extracted (AVE) also has value above 0.500 [29]. The second validity (discriminant validity) used Fornell-Lacker criterion [30] and the result shown that it reached the requirement.

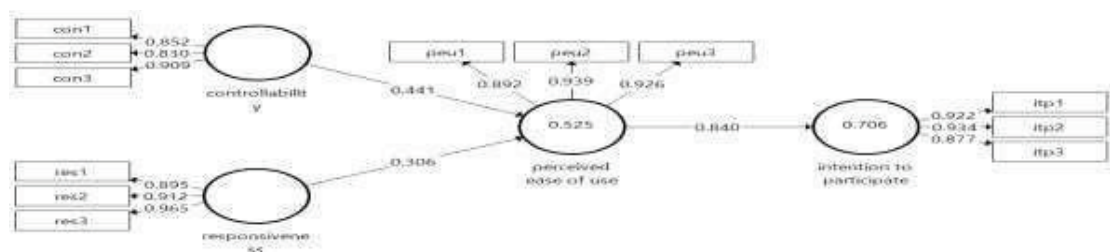


Figure 2: Measurement Model

The second assessment using smart-PLS used in this study was structural model assessment and the result is shown in Figure 3 and Table 2. Before interpreting the hypothesis testing result, it is firstly necessary to see predictive relevance (Q square) and power relevance (R square). In this study, both endogenous constructs have Q square above 0.00 (see Table 2) and in fact, it has large predictive relevance [31]. Furthermore, the power relevance of structural model is moderate for perceived ease of e-learning

use (0.525) and substantial for intention to participate [32]. In addition, the hypothesis was analyzed using the path coefficient (see Figure 2) and t statistics (see Figure 3). Based on t statistics, only one hypothesis was accepted: the effect of perceive ease of use on intention to participate in e- learning ($\beta=0.840$, t-statistic=14.274) and the rests are not significant due to low t statistics (<1.695).

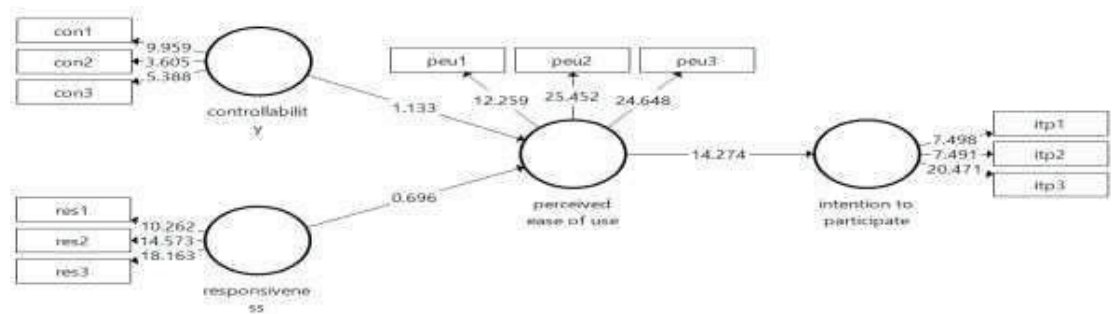


Figure 3: Structural Model

TABLE 2: Predictive Relevance and Power of Structural Model

Endogenous construct	Q square	decision	R square	decision
Intention to participate	0.517	large	0.706	substantial
Perceived ease of use	0.378	large	0.525	moderate

Among the three hypotheses that were tested in this study, only one hypothesis was accepted; that is, perceived ease of use has a positive and significant relationship with the students' intention to participate in e-learning. It indicates the importance of students' perception on the use of e-learning to increase their active involvement in e-learning itself. In other words, students who have a perceived ease of e-learning use would demonstrate higher intention to participate in e-learning. In this regard, it is also very necessary to note that perceived ease of e-learning use also depends on the students' knowledge about e-learning system. This finding is consistent with the findings of previous studies [1], [2], [17], [20], revealing that if an e-learning system is perceived as easy to use, it will create an intention to participate in e-learning. It means the finding of this study provides empiric information indicating that perceived ease of e-learning use could facilitate the students to increase their intention to participate in e-learning.

However, two other hypotheses of this study were rejected. In other words, the effect of controllability and responsiveness on perceived ease of e-learning use is not significant. This finding is unexpected one since the expected result was that controllability and responsiveness has a positive effect on perceived ease of e-learning use was not supported by the data of this study. This finding is in line with the finding

of studies conducted by [20]. Reason for why controllability and responsiveness did not have a significant effect on perceived ease of e-learning use was not clear. As discussed before, most previous studies dealing with this problem were conducted in Indonesian so that there was not enough empirical information for clarifying this problem.

4. Conclusion and Recommendation

Technology has been influencing the way things were done, including learning process. In learning process, the terminology used to capture this process is e-learning. In brief, e-learning is defined as a tool used to help transmitting knowledge to students via technology, such as email, audio, video, etc. Previous studies using Indonesia environment is still limited, especially from students' point of view; therefore, this study is aimed to investigate the effect of controllability and responsiveness of e-learning system. The result shows that controllability and responsiveness does not have a significant effect on the perceived ease of e-learning use. In contrast, the effect of the perceived ease of e-learning use on the students' intention to participate in e-learning is significantly positive. Theoretically, the present study is in line with technology acceptance model (TAM) in the sense that students' intention to participate is explained by the perceived ease of use of e-learning system. The effect of the perceived ease of e-learning use practically implies the dean can increase students' intention to participate in e-learning by increasing the perceived ease of use of e-learning system through personalization of the system and two-way communication building. This study has few limitations, such as limited number of respondents and number of external factors (only two external factors; controllability and responsiveness). Therefore, future investigation may focus on these limitations by widening the number of research sample and considering other external factors, such as two-way communication and personalization..

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