Advances in Social Science, Education and Humanities Research, volume 506
Proceedings of the 3rd International Conference on Educational Development and Quality Assurance (ICED-QA 2020)

Examination of Business Student's Satisfaction to Use E-Learning; Empirical Study during Covid 19-Pandemic in Universitas Andalas

Yulia Hendri Yeni[1,*] Vera Pujani[2]

[1] *Economic Faculty, Universitas Andalas, Indonesia*
[2] *Economic Faculty, Universitas Andalas, Indonesia*
[*] *Corresponding author. Email: yuliahendriyeni@eb.unand.ac.id*

ABSTRACT
This study examines the influence of Ease of Use and Attitude toward Students' Satisfaction to Use e-learning. Four hypotheses are proposed to investigate the linkage of three variables. Data were collected by using Google form. One hundred thirty-five students of the Accounting and Management Study Program in the Economics Faculty of Universitas Andalas participated in this study. The data were analyzed with Smart PLS. The result indicates that Ease of Use and Attitude influence Students' Satisfaction and Ease of Use also influence Attitude toward using e-learning. Moreover, this study also confirms that Attitude plays a role in mediating the relationship between Ease of Use and Students' Satisfaction to use e-learning. Research implication suggests that under forced conditions in COVID 19 pandemic, students are satisfied with using e-learning. To increase students' satisfaction, it is suggested to institution that e-learning system should be easy to use.

Keywords: *Ease of Use, Attitude, Students' Satisfaction and E-Learning*

1. INTRODUCTION

The year 2020 is started by COVID 19 issues in Wuhan, China. This Corona virus has disrupted many aspects of life around the world. COVID 19 has negatively affected the health and the economy sector within various industries, including public transportation, hotels, restaurants, and MICE (Meeting, Incentive, Convention, and Exhibition) providers. Meanwhile, several sectors have been positively impacted by increasing their performance, such as agriculture, specifically herbal medicines, which are believed to be antioxidants, chemical medicines, and health protection products such as masks, hand sanitizers, hand soap, face shield, and others. Furthermore, COVID-19 also influences learning and education activities. At the beginning of the outbreak in early 2020, the impact of this crisis has been exposed in the changing of the policies and activities of lectures at some established universities in the United States such as Harvard, Princeton and Columbia which carried out online class as a substitute of face-to-face lectures. Since The World Health Organization (WHO) declared COVID-19 as a pandemic on 11 March 2020 and stated social distancing as the best alternative to control virus transmission [1], many educational institutions decided to transform their educational system to online education or e-learning. Work from home and study from home is introduced as a response to social distancing. Therefore, since new normal declaration, e-learning is mandatory in all levels of educational institutions in Indonesia [2].

Initially, the adoption of e-learning in most higher educational institutions was intended to respond the Industrial Revolution 4.0, which prioritized flexibility in learning. However, the transformation from traditional learning to electronic learning occurs slowly. Most universities in Indonesia are still in planning and preparation stages such as e-learning system designing. Unexpectedly, the COVID-19 pandemic is forcing all educational institutions to transform comprehensively and quickly from face to face classroom learning to distant and online learning.

Based on a preliminary study on some students regarding the sudden change to e-learning system, it was found that there were several obstacles faced by students. The main problem is an unstable internet

network. In fact, some students who live in rural areas are not yet reached by the internet. This is one of the students' dissatisfaction towards the e-learning system. Another identified problem that influences students' satisfaction is the readiness of institutions for e-learning systems. It is crucial for campus to prepare a user-friendly system. Although previous research on student satisfaction toward e-learning has been carried out a lot, research conducted in forced conditions during a crisis such as a pandemic is still limited. This study which is conducted on business students from the accounting and management study program of Economic Faculty is aimed to test the predictive Satisfaction Model by including Attitude towards e-learning as antecedent of Satisfaction. Based on Information Communication and Technology (ICT) Centre of Universitas Andalas, most users of the Learning Management System (LMS) in this campus is from Economic Faculty.

2. LITERATURE REVIEW

2.1. E Learning

E-learning was introduced as a learning method to respond to developments in information and communication technology. In practice, e-learning is often used interchangeably with online learning. Some other terms that are also often used to describe e-learning are: web-based learning, distributed learning, and virtual learning. E-learning is a part of Distant Learning.

2.2. Satisfaction and Antecedents

There are several satisfaction definitions in the literature. This study follows Bhattacherjee [5], who defines satisfaction as a personal feeling towards comparing expectations and reality of using a system. In term of education, student's satisfaction is determined by various factors such as Usefulness, Ease of Use [6] [7] [8], Service Quality [9], Perceived Value [10], and Attitude [11] [12] [13]. This study examined the effect of Ease of Use and Attitude toward Satisfaction. Therefore: two hypotheses are proposed:

H1: Ease of Use influences Students' Satisfaction to use e-learning.

H2: Attitude influences Students' Satisfaction to use e-learning

2.3. Ease of Use and Attitude

Many researches in psychology indicate that Attitude describes a person's like and dislike of certain information and objects [13]. Therefore, attitude determines student behaviour towards using e-learning. Previous research on various environments found several determinants of attitude: Usefulness, Ease of Use, [12]. This shows that Perceived Usefulness and Perceived Ease of Use of e-learning systems have impact on attitude. Another research which supported that Ease of Use influences on attitude toward e-learning was conducted in Iran [11]. A more recent study of 435 students from five campuses in the United Arab of Emirates (UAE) confirmed previous results. This research aims to examine the following hypothesis:

H3: Ease of Use influences Attitude toward e-learning

2.4 Ease of Use, Attitude, and Satisfaction

There is a variety of opinions related to the linkage between Attitude and Satisfaction. As mentioned before in H2: Attitude influences Students' Satisfaction to use e-learning [11] [12] [13]. On the other hand, some studies, such as [6] and [14] argue that attitude is satisfaction's consequences. Amoroso and Lim [15] support the opinion of satisfaction as a consequence of attitude. They also found that the relationship of Ease of Use and Satisfaction was mediated by attitude. There is limited research aimed to evaluate such indirect effect of ease of use toward satisfaction, therefore the following hypothesis is forwarded:

H4: The influence of Ease of Use toward Students' Satisfaction is mediated by Attitude.

3. RESEARCH METHOD

Research that consisted of three constructs, namely: Ease of Use, Attitude, and Satisfaction, uses a quantitative approach. Data were collected by conducting a survey on business students (accounting and management study program) at the Faculty of Economics, Universitas Andalas. The reason for conducting a survey on these two study programs is because in 2019, there were two courses from each of these study programs winning SPADA Indonesia grants from the Ministry of Research, Technology, and Higher Education (Kemenristekdikti), and the lectures were carried out fully online.

Research questionnaires designed with Google Form were distributed through the WhatsApp group of lecturers at the Faculty of Economics, Universitas Andalas. Through the lecturer, the questionnaire using 7 points of Likert scale is distributed to students. The research instrument which was adopted from previous studies, consists of 4 parts. Part 1 is the respondent's information which contains 4 questions, namely gender, age, study program and the first time attending lectures using the e-learning system. Part 2 contains 6 questions about Ease of Use [16][17][18]. Part 3 consists of 7 questions related to Attitude [19], and part 4 consists of 6 questions about student satisfaction [17], [20]. The data obtained from 97 accounting students and 38

management students, were processed using PLS. The majority of respondents are female (94 students), and most students (81,5%) are 20-25 years old. Some students (50 from 135) attended e-learning for the first time in 2020.

4. RESULTS

This Research, which tested the model of satisfaction towards e-learning, utilized SEM/Smart PLS to analyze the data. Two steps analysis of Smart PLS consist of measurement model test and structural model test. The measurement (outer) model test aimed to identify reliability and validity tests. Meanwhile, the structural (inner) model is used to evaluate the research model.

4.1. Measurement (outer) Model

Outer model measures the internal consistency reliability of constructs. Three constructs of Ease of Use, Attitude, and Satisfaction which are classified as the reflective model, examined outer loadings, composite reliability, average variance extracted (AVE=convergent validity), and discriminant validity. Figure 1 showed the outer loading scores are in the range of 0.654 to 0.892, which is generally considered acceptable.

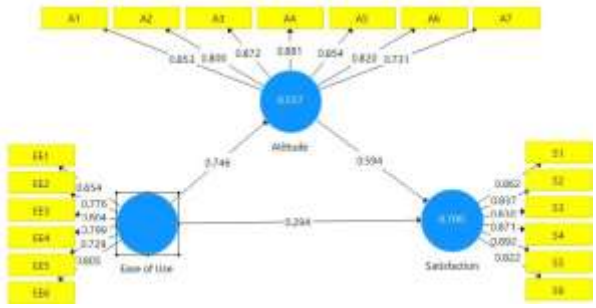

Figure 1. Outer Model (measurement and R^2)

Referring to Table 1, three constructs have the values of Cronbach's Alpha and composite reliability is robust in terms of their internal consistency of all constructs in a range from 0.857 to 0.925 and exceeds the established threshold value of 0.7 [21]. In addition, the average variance extracted (AVE) related to the percentage of the variance of the construct that is explained by the items used to measure the construct.

Table 1. Cronbach's Alpha and Composite reliability test results

Construct names		Cronbach's Alpha*	Composite reliability*	AVE**
A	Attitude	0,925	0,940	0,691
EE	Ease of use	0,857	0,893	0,583
S	Satisfaction	0,925	0,941	0,727

*Note(s): *Acceptable values for both tests are 0.70 or more*
**Acceptable values for AVE are 0.50 or more

According to Fornell and Larcker [22], in Table 1 AVE for each measure is equal to or exceeds 0.50 indicated that all AVE values are above values of 0.5 for all constructs. Briefly, the convergent validity was supported.

To measure discriminant validity, there are cross-loading and Fornell-Larcker [22] criteria. The discriminant validity tested using Fornell-Larcker [22] compares the square root of AVE of each construct with all correlations of other constructs. Then checking each construct has a higher variance with its indicators than variances with other constructs (Table 2) in presenting the bold values on the matrix diagonal represent the square root of AVE for each construct. This values sufficient evidence for the discriminant validity of the scales used. Another discriminant tested is cross loading, which is used to check the validity of the discriminant other than the above criteria. If an indicator has a higher correlation with other latent variables than with the latent variable itself then model fit must be reconsidered. Table 3 shows all of loading scores have higher scores to its constructs rather than other constructs, that the discriminant validity by cross loading was supported. In conclusion, all of the values indicated that there is discriminant validity between all the constructs based on the cross-loadings criterion [21]

Table 2. Discriminant Validity

	Attitude (A)	Ease of use (EE)	Satisfaction (S)
Attitude	**0.832***		
Ease of use	0.746	**0.763***	
Satisfaction	0.814	0.737	**0.853***

Note(s): * Diagonal number are square roots of AVE while off diagonal number are correlations.

Table 3. Cross Loading

	Attitude (A)	Ease of use (EE)	Satisfaction (S)
A1	**0,853**	0,611	0,620
A2	**0,800**	0,567	0,548
A3	**0,872**	0,636	0,681
A4	**0,881**	0,612	0,655
A5	**0,854**	0,663	0,761
A6	**0,820**	0,655	0,763
A7	**0,731**	0,581	0,667
EE1	0,423	**0,654**	0,351
EE2	0,569	**0,776**	0,522
EE3	0,545	**0,804**	0,539
EE4	0,554	**0,799**	0,645
EE5	0,604	**0,729**	0,542
EE6	0,676	**0,805**	0,697
S1	0,711	0,618	**0,862**
S2	0,723	0,623	**0,837**
S3	0,714	0,671	**0,830**
S4	0,670	0,623	**0,871**
S5	0,691	0,636	**0,892**
S6	0,646	0,595	**0,822**

4.2. Structural (inner) Model

To measure the inner model, the bootstrapping analysis was conducted to assess the statistical significance of the path coefficients in the structural model. The result of inner model assessment can be used to test whether the four hypotheses are supported by the data or not.

In this study, by applying the PLS–SEM algorithm, estimates are obtained for the structural model. To test four hypotheses, it was represented by R2, Coefficient and bootstrap critical ratios (t-values). The value of R2 was 0.557 for attitude and 0.700 for satisfaction (Figure1 and Table 4). The mean R2 of the structural model, indicated to the predictive power of the structural model without regard to the measurement model. Given the indices for predictive relevance of the structural model are higher than the recommended 0.10, the predictive power of individual paths and of the structural models are satisfactory, supporting the theoretical soundness of the conceptual model [23].

Table 4. Coefficient, Direct/Indirect Effects, t-statistics and p-value

	Construct names	Coefficient	*R2*	*t*-Statistics	Significant[1]
H1	Attitude → Satisfaction[2]	0.594		6,867	**Yes**
H2	Ease of use → Attitude[2]	0.746	0.557	18,340	**Yes**
H3	Ease of use → Satisfaction[2]	0.294		17,953	**Yes**
H4	Ease of use → Attitude → Satisfaction [3]	0.444	0.700	5,851	**Yes**

Note(s): [1]***Significance level is α =0.05 (2 tailed)***
[2]***Direct effect***
[3]***Indirect effect***

The hypotheses testing related to coefficients and t-statistic values (Table 4), indicated that all the resulting values show significant support, since t-statistics between 5,851 to 18,430 representing a value above 1,96 which is significant with a two-tailed test. Again, all of coefficient values in range 0.294 to 0.746 were acceptable. As the result, all of hypotheses were supported by predictive relevance for direct influence of construct of ease of use to attitude and user satisfaction and also indirect influence between ease of use to satisfaction via attitude constructs. Therefore, the research finding support previous studies such as [7][13] [24] and [15].

5. CONCLUSION

This study is to examine the influence of Ease of Use and Attitude on Students' Satisfaction to use e-learning under forced conditions during COVID 19 Pandemic. Even with the sudden utilization of e-learning, two construct of Ease of Use and Attitude can improve Students' Satisfaction. In addition, the role of attitude is not only as antecedents of Students Satisfaction but also as mediating of the relationship between Ease of Use and Students' Satisfaction. This study has several limitations, such as data collected only from students majoring in accounting and management. The variety of respondents can be wider by involving students from other study programs, it can even be expanded by involving students from private universities in future research. In addition, future research can also be conducted by adding antecedent variables such as self-efficacy, subjective norms, anxiety and perceived value. Expansion of research can also be done by adding consequences such as behavioral intention to use e-learning, actual behavior and loyalty.

ACKNOWLEDGMENTS

We would like to thank Lembaga Pengembangan Pendidikan dan Penjaminan Mutu (LP3M) Universitas Andalas for supporting this research and present the research findings at ICED QA III held on 27-28 October 2020 in Padang, Indonesia.

REFERENCES

[1] R. C. C. Dantas, P. A. De Campos, I. Rossi, and R. M. Ribas, "Implications of social distancing in Brazil in the pandemic period of COVID-19," Infect. Control Hosp. Epidemiol., pp. 1–2, 2020.

[2] R. Radha, K. Mahalakshmi, V. S. Kumar, and A. R. Saravanakumar, "E-Learning during Lockdown of Covid-19 Pandemic: A Global Perspective," Int. J. Control Autom., vol. 13, no. 4, pp. 1088–1099, 2020.

[3] Y. Liu and H. Wang, "A comparative study on e-learning technologies and products: From the east to the west," Syst. Res. Behav. Sci., vol. 26, no. 2, pp. 191–209, 2009.

[4] F. Ozdamli and H. Uzunboylu, "M-learning adequacy and perceptions of students and teachers in secondary schools," Br. J. Educ. Technol., vol. 46, no. 1, pp. 159–172, 2015.

[5] Y. J. Joo, S. Park, and E. K. Shin, "Students' expectation, satisfaction, and continuance intention to use digital textbooks," Comput. Human Behav., vol. 69, pp. 83–90, 2017.

[6] E. Ibili, D. Resnyansky, and M. Billinghurst, "Applying the technology acceptance model to understand maths teachers' perceptions towards an augmented reality tutoring system," Educ. Inf. Technol., vol. 24, no. 5, pp. 2653–2675, 2019.

[7] H. J. Shah and S. Attiq, "Impact of Technology Quality, Perceived Ease of Use and Perceived Usefulness in the Formation of Consumer's Satisfaction in the Context of E-learning Hassan,"

Abasyn J. Soc. Sci., vol. 9, no. 1, pp. 124–140, 2016.

[8] M. Amin, S. Rezaei, and M. Abolghasemi, "User satisfaction with mobile websites: the impact of perceived usefulness (PU), perceived ease of use (PEOU) and trust," Nankai Bus. Rev. Int., vol. 5, no. 3, pp. 258–274, 2014.

[9] L. Pham, Y. B. Limbu, T. K. Bui, H. T. Nguyen, and H. T. Pham, "Does e-learning service quality influence e-learning student satisfaction and loyalty? Evidence from Vietnam," Int. J. Educ. Technol. High. Educ., vol. 16, no. 1, 2019.

[10] M. A. Nugroho, D. Setyorini, and B. T. Novitasari, "The role of satisfaction on perceived value and e-learning usage continuity relationship," Procedia Comput. Sci., vol. 161, pp. 82–89, 2019.

[11] N. Jafari Navimipour and B. Zareie, "A model for assessing the impact of e-learning systems on employees' satisfaction," Comput. Human Behav., vol. 53, pp. 475–485, 2015.

[12] S. Del Barrio-García, J. L. Arquero, and E. Romero-Frías, "Personal learning environments acceptance model: The role of need for cognition, e-learning satisfaction and students' perceptions," Educ. Technol. Soc., vol. 18, no. 3, pp. 129–141, 2015.

[13] P. Vate-U-Lan, "Psychological impact of e-learning on social network sites: online students' attitudes and their satisfaction with life," J. Comput. High. Educ., vol. 32, no. 1, pp. 27–40, 2020.

[14] H. M. Dai, T. Teo, N. A. Rappa, and F. Huang, "Explaining Chinese university students' continuance learning intention in the MOOC setting: A modified expectation confirmation model perspective," Comput. Educ., vol. 150, p. 103850, 2020.

[15] D. L. Amoroso and R. A. Lim, "Exploring the Personal Innovativeness Construct: The Roles of Ease of Use, Satisfaction and Attitudes," Asia Pacific J. Inf. Syst., vol. 25, no. 4, pp. 662–685, 2015.

[16] A. Mehta, N. P. Morris, B. Swinnerton, and M. Homer, "The Influence of Values on E-learning Adoption," Comput. Educ., vol. 141, no. June, 2019.

[17] R. Ramirez-Anormaliza, F. Sabaté Garriga, and X. Llinàs-Audet, "the Acceptance and Use of the E-Learning Systems Among the University Teachers in Ecuador," EDULEARN16 Proc., vol. 1, no. July, pp. 3666–3674, 2016.

[18] J. Wang and S. Senecal, "Measuring perceived website usability," J. Internet Commer., vol. 6, no. 4, pp. 97–112, 2008.

[19] T. H. Chu and Y. Y. Chen, "With Good We Become Good: Understanding e-learning adoption by theory of planned behavior and group influences," Comput. Educ., vol. 92–93, pp. 37–52, 2016.

[20] W. S. Lin, "Perceived fit and satisfaction on web learning performance: IS continuance intention and task-technology fit perspectives," Int. J. Hum. Comput. Stud., vol. 70, no. 7, pp. 498–507, 2012.

[21] J. F. Hair, J. J. Risher, M. Sarstedt, and C. M. Ringle, "When to use and how to report the results of PLS-SEM," Eur. Bus. Rev., vol. 31, no. 1, pp. 2–24, 2019.

[22] C. Fornell and D. F. Larcker, "Evaluating Structural Equation Models with Unobservable Variables and Measurement Error," J. Mark. Res., vol. 18, no. 1, p. 39, 1981.

[23] A. O'Cass and J. Carlson, "An e-retailing assessment of perceived website-service innovativeness: Implications for website quality evaluations, trust, loyalty and word of mouth," Australas. Mark. J., vol. 20, no. 1, pp. 28–36, 2012.

[24] S. A. Salloum, A. Qasim Mohammad Alhamad, M. Al-Emran, A. Abdel Monem, and K. Shaalan, "Exploring students' acceptance of e-learning through the development of a comprehensive technology acceptance model," IEEE Access, vol. 7, pp. 128445–128462, 2019.