

Continuance Intention, Educational System Quality, Instructor Quality and User Satisfaction on Perceived Impact on Learning



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Abstract This study examines the effect of perceived impact on learning in universities in the Special Region of Yogyakarta. This study emphasizes the external and internal individual factors that affect the perceived impact on e-learning. Individual external factors analyzed in this study were educational system quality, instructor quality, and satisfaction. The internal aspect is continuance intention; This research is a survey research with the respondents being university students. While the method used is quantitative. Data were collected through a questionnaire. This study used data gathered from 150 students. Data analysis uses the structural model with Partial Least Square-SEM 3.2.9. The results showed that the perceived impact on the learning model was accepted.

Keywords Perceived impact for e-learning · Continuance intention · Educational system quality · Instructor quality · Satisfaction

1 Introduction

E-learning has been widely used in student learning in universities. The adoption of e-learning has faced many obstacles, although some have been successful. Universities in Indonesia urgently need the successful adoption of e-learning to provide solutions related to learning that cannot be done during the Covid-19 pandemic. The COVID-19 pandemic has paralyzed many educational institutions, especially in universities. The reason is that many universities before the pandemic had never used e-learning. E-learning is only a discourse that has never been applied successfully. The readiness of online learning support facilities is also very limited. This condition makes researchers interested in examining how the perception of e-learning users is on the

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perceived impact during online learning. The pandemic forced learning to be done online. Cidral et al. (2020) have conducted a study on e-learning research from 2001 to 2016. Cidral et al. (2018) showed that starting in 2001, the focus of e-learning was on adoption intentions, perceived benefits of content, and customization. E-learning research then began to develop to include satisfaction from 2007. In 2013, research focused on the success of e-learning and how student characteristics affect e-learning (Cidral et al. 2018). Luo (2021) also shows that previous research has focused on reliability and ease of access to technology. The current study of e-learning success is more focused on student–teacher attitudes and interactions. E-Learning philosophy focuses on the expansion of distance learning models (Alam et al. 2021). Continuous technological evolution refers to technological intervention in the learning process (Al-Fraihat et al. 2020). To analyze the e-learning adoption model, (Vanderschaaf et al. 2020) use the theory of Task Technology Fit (TTF) to investigate the suitability of technology with the tasks faced by its users (Chatterjee and Kumar Kar 2020). Goodhue and Thompson's TTF model defines that technology acceptance depends on how well the new technology fits the needs of a particular task. TTF is an extension of extending TAM by considering how charges affect usage intentions. The actions taken by individuals, technology is seen as a tool used by individuals in carrying out their duties. Performance impact refers to individuals' achievement of a portfolio of tasks (Yawson and Yamoah 2020).

This study aimed to analyze the perceived impact on learning caused by continuance intention, educational system quality, instructor quality, and user satisfaction. This research is essential because delays in the adoption of e-learning can be a scourge of learning failure at universities (Mehta et al. 2019). On the other hand, Cubric (2020) stated that research on the adoption of innovations in education is interesting because most e-learning innovations originating from higher education teaching practices fail to reach this critical mass point. Elia et al. (2019) show that the condition of universities is still troubling due to the lack of a pedagogical foundation for education at the technology level. The low awareness of teachers that technology can fix all the problems they face in class, both face-to-face and face-to-face virtually. This study discusses the perceived impact on learning which begins with a discussion of issues related to the adoption of e-learning. This study also discusses the theoretical basis used in the research, which includes perceived impact on learning, educational system quality, instructor quality and satisfaction. Finally, this study explains the contribution of the theory, the limitations of the research and some suggestions that can be put forward for future research.

2 Literature Review

2.1 *Perceived Impact on Learning*

Continuance intention is considered more important than initial acceptance in successful technology adoption (Venkatesh et al. 2012). Technology adoption research focuses on satisfying and maintaining relationships with users (Moore and McElroy 2012). User satisfaction in the e-learning system affects the continuity intention of a sustainable method (Lin and Wang 2012). Satisfaction is an antecedent of continuance intention. When users feel that e-learning services are satisfactory, users tend to intend to continue using e-learning services (Kumar et al. 2017). Continuance intention is believed to have a positive influence on user performance. In the context of e-learning, McGill and Klobas (2009) tested the success of the learning management system (LMS), and the results showed that the increasing use of LMS by students affected the perception of learning impact. User satisfaction has proven its validity and reliability as an essential measure of the success of information systems and e-learning systems (Kumar and Kumar 2020). User satisfaction is a determinant of the benefit construct. The effect of user satisfaction on the benefits achieved from the system is empirically found to be significant in the DeLone and McLean information system success model. Cachero-Martínez and Vázquez-Casielles (2021) explains that when users of an e-learning system are more satisfied, they use the system, and the benefits of using the system will be achieved. According to Cidral et al. (2018), perceived satisfaction explains 43.3% of the impact variance. Emerging strategies to increase satisfaction in higher education are obtained through a student-oriented approach. This idea focuses on how to satisfy students with the readiness of educational services so that students are loyal to the university (Cachero-Martínez and Vázquez-Casielles 2021).

H1: User satisfaction affects Continuance intention.

H2: Continuance intention affects the perceived impact on learning.

2.2 *Educational System Quality and Satisfaction*

Educational system qualifications are a significant resource in the modern information systems environment. The quality of the education system is determined by access to life, employment, health, and personal life opportunities (Zapfe and Gross 2021). Cachero-Martínez and Vázquez-Casielles (2021) states that the quality of the education system has a positive effect on user satisfaction. Cidral et al. (2018) note that there is a positive relationship between the quality of the education system and satisfaction.

H3: Educational system quality affects satisfaction.

2.3 *Instructor Quality and Satisfaction*

The role of lecturers in the success of e-learning has received attention from researchers in the e-learning arena. Cidral et al. (2018) found a positive relationship between lecturer quality and user satisfaction. The quality of teachers has a significant influence on student satisfaction with the e-learning system (Mtebe and Raphael 2018). Aspects related to teachers, including positive attitude, enthusiasm, recommendations to students, involvement with various activities (interactive and communication and responsiveness to students), also tend to influence e-learning systems.

H4: Instructor quality affects user satisfaction.

3 Research Methods

This research took 150 respondents to students who had never done online education before the COVID-19 pandemic. The data for this study were collected through a survey in the Special Region of Yogyakarta, Indonesia. The current research population consists of all active students in the Special Region of Yogyakarta, Indonesia. Respondents are students who are involved in online shopping. This research was conducted during the new-normal period of the COVID-19 pandemic, where many educational institutions were negatively affected by this pandemic. The recommended sample size requirement is ten times the number of structural paths (Hair et al. 2020). Data collection was used using a questionnaire. Data analysis tool using PLS-SEM 3.2.9.

4 Result

The description of respondents can be seen in Table 1.

The results of this study indicate that the instrument used to measure the variables used in this study is valid and reliable. They are shown from the value of convergent validity, discriminant validity, and AVE. Meanwhile, the reliability test is seen from the composite reliability and Cronbach alpha values. Valid and reliable data is >0.7 , and the expected AVE value is >0.5 ; each construct shown in Table 2 has criteria above the expected standard. Meanwhile, discriminant validity is evaluated by comparing the loading value on the intended construct to be greater than the loading value with other constructs. Table 2 presents the reliability and validity test results, which show that each loading value on the intended construct is greater than the loading value of the other constructs. Table 3 shows the Hypothesis model for this research.

Table 1 Characteristics of respondents

Characteristics of respondents	%
Gender	
Male	45%
female	55%
Long time using the Internet	
< 1 year	22%
>4 years	12%
1–2 years	26%
>2–3 years	20%
>3–4 years	20%
Amount	100%
Frequency of Using the Internet to Study In A Day	
Internet Usage Frequency	(%)
<1 h	2%
>4 h	39%
1–2 h	27%
>2–3 h	22%
>3–4 h	12%

Table 2 Construct reliability and validity

	Cronbach’s Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Continuance intention	0.819	0.876	0.878	0.604
Educational System Quality	0.797	0.857	0.816	0.601
Instructor Quality	0.724	0.714	0.724	0.572
Perceived impact on learning	0.738	0.755	0.848	0.650
Satisfaction	0.776	0.702	0.775	0.538

Table 3 Mean, STDEV, T-Values, P-Values

	Original Sample (O)	T Statistics (O/STDEV)	P Values	Hypothesis
Continuance intention → Perceived impact on learning	0.612	12.461	0.000	Supported
Educational System Quality → Satisfaction	0.145	1.473	0.142	Not Supported
Instructor Quality → Satisfaction	0.315	3.598	0.000	Supported
Satisfaction → Continuance intention	0.277	3.086	0.002	Supported



Fig 1. Perceived impact on learning model

This study indicates that education system quality can affect the perceived impact of e-learning by mediating user satisfaction. Satisfaction can be interpreted as satisfaction related to various aspects of the service it receives. E-learning satisfaction is directly influenced by the quality of the education system and the quality of teachers. The quality of the education system also affects the perceived impact of e-learning by mediating satisfaction. This satisfaction affects the intention to continue using e-learning which ultimately affects the perceptions that arise from students regarding the effects of e-learning (Fig. 1).

5 Discussion

This research model produces a positive and significant relationship except for educational system quality and satisfaction. This study is consistent with the research results conducted by Lin and Wang (2012), who found that user satisfaction has a positive and significant effect on continuance intention. This finding follows (Nugroho et al. 2019) and (Park et al. 2019), which state that when users feel that e-learning services are satisfactory, users tend to intend to continue using e-learning services. This study found that continuance intention had a positive and significant effect on the perceived impact on learning. This finding is in line with a survey conducted by Martinez-Arguelles and Batalla-Busquets (2016). In other words, the higher the level of continuance intention, the higher the perceived impact on learning. This study’s relationship between Educational System Quality and satisfaction resulted in a positive but not significant relationship. This result is not in line with the findings of Cidral et al. (2018) who found a positive relationship in this relationship. Instructure quality on user satisfaction in this study resulted in a positive and significant relationship. This is in line with the research conducted by Mtebe and Raphael (2018). These results imply that the higher the infrastructure quality, the higher the user satisfaction.

6 Conclusion

This research model has a significant and positive relationship on the hypothesis of Continuance intention to Perceived impact on learning, Instructor Quality to Satisfaction, and Satisfaction to Continuance intention. However, the relationship between educational system quality and satisfaction was found to be positive but not significant.

7 Limitations and Suggestions

Although this model has succeeded in forming a perceived impact on the learning model, it still needs to be evaluated on the limitations of this study. The possibility of regional/regional bias will present different characteristics of the behavior of the individual respondents in this study, so this finding cannot be generalized. Future research can examine similar research models in areas/regions that have similar characteristics to this study. The development of the conceptual model also still provides opportunities for further researchers by adding several variables that might affect the perceived impact on learning, including e-learning readiness, motivation, and self-efficacy.

References

- Alam, M.M., Ahmad, N., Noorulhasan Naveed, Q., Patel, A., Abohashrh, M., Khaleel, M.A.: E-learning services to achieve sustainable learning and academic performance: an empirical study (2021). <https://doi.org/10.3390/su13052653>
- Al-Fraihat, D., Joy, M., Masa'deh, R., Sinclair, J.: Evaluating e-learning systems success: an empirical study. *Comput. Hum. Behav.* **102**, 67–86 (2020). <https://doi.org/10.1016/J.CHB.2019.08.004>
- Cachero-Martínez, S., Vázquez-Casielles, R.: Building consumer loyalty through e-shopping experiences: the mediating role of emotions. *J. Retail. Consum. Serv.* **60**, 102481 (2021). <https://doi.org/10.1016/j.jretconser.2021.102481>
- Chatterjee, S., Kumar Kar, A.: Why do small and medium enterprises use social media marketing and what is the impact: empirical insights from India. *Int. J. Inf. Manag.* **53**, 102103 (2020). <https://doi.org/10.1016/J.IJINFOMGT.2020.102103>
- Cidral, W.A., Oliveira, T., Di Felice, M., Aparicio, M.: E-learning success determinants: Brazilian empirical study. *Comput. Educ.* **122**, 273–290 (2018). <https://doi.org/10.1016/j.compedu.2017.12.001>
- Cidral, W., Aparicio, M., Oliveira, T.: Students' long-term orientation role in e-learning success: a Brazilian study. *Heliyon* **6**(12), e05735 (2020). <https://doi.org/10.1016/j.heliyon.2020.e05735>
- Cubic, M.: Drivers, barriers and social considerations for AI adoption in business and management: a tertiary study. *Technol. Soc.* **62**, 101257 (2020). <https://doi.org/10.1016/j.techsoc.2020.101257>
- Elia, G., Solazzo, G., Lorenzo, G., Passiante, G.: Assessing learners' satisfaction in collaborative online courses through a big data approach. *Comput. Hum. Behav.* **92**, 589–599 (2019). <https://doi.org/10.1016/J.CHB.2018.04.033>

- El-masri, M., Tarhini, A.: Factors affecting the adoption of e-learning systems in Qatar and USA: extending the unified theory of acceptance and use of technology 2 (UTAUT2). *Educ. Technol. Res. Dev.* **65**(3), 743–763 (2017). <https://doi.org/10.1007/s11423-016-9508-8>
- Hair, J.F., Howard, M., Nitzl, C.: Assessing measurement model quality in PLS-SEM using confirmatory composite analysis. *J. Bus. Res.* **109**, 101–110 (2020). <https://doi.org/10.1016/J.JBUSRES.2019.11.069>
- Kumar, B., Manrai, A.K., Manrai, L.A.: Purchasing behavior for environmentally sustainable products: a conceptual framework and empirical study. *J. Retail. Consum. Serv.* **34**, 1–9 (2017). <https://doi.org/10.1016/J.JRETCONSER.2016.09.004>
- Kumar, P., Kumar, N.: A study of learner's satisfaction from MOOCs through a mediation model. *Procedia Comput. Sci.* **173**, 354–363 (2020). <https://doi.org/10.1016/J.PROCS.2020.06.041>
- Lin, W.S., Wang, C.H.: Antecedences to continued intentions of adopting e-learning system in blended learning instruction: a contingency framework based on models of information system success and task-technology fit. *Comput. Educ.* **58**(1), 88–99 (2012)
- Long, P., Limbu, Y.B., Bui, T.K., Nguyen, H.T., Pham, H.T.: Does e-learning service quality influence e-learning student satisfaction and loyalty? Evidence from vietnam: revista de universidad y sociedad del conocimiento. *Int. J. Educ. Technol. High. Educ.* **16**(1), 1–26 (2019). <https://doi.org/10.1186/s41239-019-0136-3>
- Luo, C.: Analyzing the impact of social networks and social behavior on electronic business during COVID-19 pandemic. *Inf. Process. Manag.* **58**(5), 102667 (2021). <https://doi.org/10.1016/J.IPM.2021.102667>
- Martínez-Argüelles, M.-J., Batalla-Busquets, J.-M.: Perceived service quality and student loyalty in anonline university. *Int. Rev. Res. Open Distrib. Learn.* **17**(4), (2016). <https://doi.org/10.19173/irrodl.v17i4.2518>
- McGill, T., Klobas, J.: A task–technology fit view of learning management system impact. *Comput. Educ.* **52**, 496–508 (2009). <https://doi.org/10.1016/j.compedu.2008.10.002>
- Mehta, A., Morris, N.P., Swinnerton, B., Homer, M.: The influence of values on e-learning adoption. *Comput. Educ.* **141**, 103617 (2019). <https://doi.org/10.1016/j.compedu.2019.103617>
- Moore, K., McElroy, J.C.: The influence of personality on Facebook usage, wall postings, and regret. *Comput. Hum. Behav.* **28**(1), 267–274 (2012)
- Mtebe, J.S., Raphael, C.: Key factors in learners' satisfaction with the e-learning system at the university of Dares Salaam, Tanzania. *Australas. J. Educ. Technol.* **34** (2018). <https://doi.org/10.14742/ajet.2993>
- Nugroho, M.A., Setyorini, D., Novitasari, B.T.: The role of satisfaction on perceived value and E-learning usage continuity relationship. *Procedia Comput. Sci.* **161**, 82–89 (2019). <https://doi.org/10.1016/j.procs.2019.11.102>
- Park, C.W., Kim, D.G., Cho, S., Han, H.J.: Adoption of multimedia technology for learning and gender difference. *Comput. Hum. Behav.* **92**, 288–296 (2019). <https://doi.org/10.1016/j.chb.2018.11.029>
- Vanderschaaf, H.P., Başoğlu, N., Fountain, R.: Determinants of student information technology adoption (2020)
- Venkatesh, V., Thong, J.Y.L., Xu, X.: Consumer acceptance and use of information technology: extending the unified theory of acceptance and use of technology. *MIS q. Manag. Inf. Syst.* **36**(1), 157–178 (2012). <https://doi.org/10.2307/41410412>
- Yawson, D.E., Yamoah, F.A.: Understanding satisfaction essentials of E-learning in higher education: a multi-generational cohort perspective. *Heliyon* **6**(11), e05519 (2020). <https://doi.org/10.1016/J.HELIYON.2020.E05519>
- Zapfe, L., Gross, C.: How do characteristics of educational systems shape educational inequalities? Results from a systematic review. *Int. J. Educ. Res.* **109**, 101837 (2021). <https://doi.org/10.1016/J.IJER.2021.101837>