

Post-Pandemic: University Students' Satisfaction on the Use of E-Learning

Daisy Mui Hung Kee¹, John Hong En Liew², Jeanlu Heng³, Joshua Chun Kith Ng⁴, Kelly Jani⁵, Dini Kurnia Antika⁶, Eli Purwatiningsih⁷

Universiti Sains Malaysia, Malaysia^{1, 2, 3, 4}

Universitas Brawijaya, Indonesia^{5, 6, 7}

Correspondence Email: johnliew1113@student.usm.my

ORCID ID: 0000-0003-2045-5064

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ABSTRACT

In 2020, approximately all universities worldwide abruptly closed due to an urgent public health issue to stop the COVID-19 epidemic from spreading. Unfortunately, even though some universities have undergone online teaching techniques before, they are not prepared to learn online fully. This research examines whether students' attitudes, convenience flexibility, and schools' support influence the continuance intention toward e-learning and whether satisfaction with e-learning is the mediator of the relationships above. This study was conducted in Malaysia and Indonesia after the COVID-19 epidemic to assess university students' intent to continue using e-learning platforms. 160 college students in all took part in the research. This study reveals that satisfaction directly influences continuance intention whereas convenience flexibility and school support influence continuance intention when satisfaction came in and plays a role as a mediator. The link between students' attitudes, convenience flexibility, school support, and continuance intention are mediated by their satisfaction with e-learning. To bolster students' contentment with e-learning, it is suggested for universities to fortify the convenience and flexibility of the system and improve the level of support provided by the institution.

Keywords: COVID-19, E-Learning, Higher Education, Online Learning, Student Satisfaction

INTRODUCTION

The World Health Organization (WHO) reported that a novel coronavirus called COVID-19 had infected humans starting from January 5, 2020 (WHO, 2020). The COVID-19 pandemic, however, has had the greatest aftermath on a variety of sectors in both Malaysia and Indonesia, including the most abrupt decline in economic activity in recent history and the closure of most universities globally in March 2020. According to United Nations Educational, Scientific, and Cultural Organization, more than 10 countries have executed nationwide closures, impacting approximately 90% of students around the world (UNESCO, 2020). The pandemic has brought challenges to higher education that affect students, educators, and the communities they serve (Hu & Kee, 2022). As a result, most universities worldwide were asked to use online teaching platforms to avoid physical interaction between lecturers and students (Ullah, Khandakar, Aziz, & Kee, 2022). The COVID-19 pandemic has catalyzed a significant surge in the adoption of E-learning as a means of continuing education and professional development. With the sudden and widespread closure of physical educational institutions, E-learning emerged as a viable alternative, becoming a fundamental component of the educational landscape during these challenging times. This accelerated adoption of E-learning platforms and online courses holds the promise of enhancing individuals' comprehension of diverse E-learning methodologies, cutting-edge technologies, and effective system administration (Das et al., 2021).

As more people embrace E-learning to bridge the educational gap created by the pandemic, they are exposed to a wide array of tools and techniques, fostering a deeper understanding of this virtual learning paradigm. Furthermore, E-learning platforms have been rapidly evolving, incorporating innovative features and technologies, which users are compelled to acquaint themselves with, thereby expanding their technological competence. In parallel, the surge in E-learning encourages greater familiarity with system administration, as educators and institutions grapple with the task of effectively managing these platforms to deliver quality education.

Nevertheless, this initiative was executed without taking into account the technological competencies of both students and teachers, as highlighted in the study by Almusharraf and Khahro in 2020. The majority of individuals involved were ill-prepared to transition to fully online learning in the midst of the pandemic, as emphasized by Munir, Anwar, and Kee in their 2021 research. Despite this, online courses and e-learning played a crucial role in fulfilling students' educational requirements and facilitating ongoing engagement between educators and their students, thus contributing to bolstering students' self-esteem and confidence during this challenging period.

The letter "e" in the word "e-learning" refers to "electronic". When people are learning through the Internet, it is a form of e-learning (Yekefallah, Namdar, Panahi, & Dehghankar, 2021). Additionally, E-learning is also known as online learning. To illustrate this, e-learning is a process when learning is conducted online by using electronic devices and modern technologies. It is a technology that employs the internet across diverse platforms, encompassing online media, social media, video conferencing, and mobile learning (Pontoh, Linting, & Syamsuddin, 2021). This equalization of terms is pivotal because both "E-learning" and "online learning" are fundamentally synonymous, denoting educational modes that leverage digital technologies and the internet. They encompass a wide spectrum of online educational activities, including formal coursework, self-paced learning, webinars, and more. One of the core strengths of E-learning or online learning is its adaptability and accessibility. Learners can engage with course materials, interact with instructors, and collaborate with peers from virtually anywhere as long as they have an internet connection. The pandemic, in particular, has

underscored the significance of this accessibility, leading to a substantial surge in online learning during the COVID-19 crisis. The growth of E-learning and online learning signifies a profound transformation in the educational landscape. Both traditional brick-and-mortar institutions and online-exclusive educational providers have integrated E-learning into their offerings. This adaptability caters to a diverse array of learners, each with their unique needs and preferences.

E-learning has become an integral part of contemporary education, particularly during the COVID-19 pandemic. This mode of learning primarily occurs over the Internet, affording students the convenience of accessing their course materials and engaging in revisions from virtually any location and at any time. The digital nature of e-learning makes it highly adaptable and accessible, ensuring that learning is not restricted by physical boundaries or time constraints.

In the context of the pandemic, e-learning has transcended its traditional role and has, in many cases, become the sole means of education for university students and instructors. The restrictions and uncertainties brought about by the global health crisis necessitated a swift transition to virtual learning environments. As a result, e-learning systems have emerged as the primary and, in some cases, the only platform available for both students and lecturers to ensure continuity in education. This transformation highlights the resilience and versatility of e-learning, making it an indispensable tool in the educational landscape of today's ever-changing world. E-learning typically takes place over the Internet, so students can access their course learning materials and do revisions online anytime and anywhere. In short, e-learning systems have become the primary and only platform for university students and lecturers during the pandemic.

Based on the call by Sabeh, Husin, Kee, Baharudin, and Abdullah (2021), it is important to identify the factors contributing to the success of e-learning to enhance its utilization further. This call to action resonates with the evolving educational landscape, wherein E-learning has not only gained prominence but has also transformed into a primary educational mode. In recognizing the significance of this call, it becomes evident that enhancing the utilization of E-learning is contingent on a deep-seated understanding of the components that propel its efficacy and acceptance.

Key determinants such as students' attitudes towards e-learning, the convenience and flexibility afforded by these systems, and the extent of school support in facilitating e-learning experiences have emerged as crucial factors. These elements play a vital role in shaping students' perceptions and experiences within the e-learning environment. This study examines the primary factors that contribute to university students' continuance intention toward e-learning systems during the post-pandemic COVID-19 in Malaysia and Indonesia and whether the link between students' attitudes, convenience flexibility, school support, and continuance intention is mediated by their satisfaction with e-learning.

LITERATURE REVIEW

Continuance Intention

Continuance intention refers to the extent to which a user is intentionally using a particular system continuously. Hence, continuance intention in this research refers to students' willingness to use the e-learning portal during the post-pandemic phase (Rajeh et al., 2021). The study by Abdullah, Arokiyasamy, Goh, Culas, and Manaf (2022) reported many factors influencing continuance intention, including students' attitudes, convenience flexibility, and school support. In addition, students' satisfaction with e-learning plays a role as a mediator of the link between these influencing factors and

continuance intention. The continuity of E-learning engagement is intrinsically tied to a student's intention to persist in using the platform for their educational pursuits. When a student expresses a clear and unwavering desire to continue their learning journey through the E-learning platform, it signifies a profound commitment to this mode of education. This intention encompasses a readiness to embrace the digital learning environment, taking advantage of the convenience and flexibility it offers. Furthermore, it underscores the student's recognition of the platform's effectiveness in delivering educational content.

In essence, a student's intention to continue using the E-learning platform serves as a pivotal determinant of their continued participation in online education. It reflects not only their personal motivation and satisfaction with the platform but also their confidence in its ability to meet their academic needs. This intention underscores the importance of fostering a positive and conducive E-learning environment that not only captures students' initial interest but also sustains their commitment to this educational pathway. Thus, this research aims to investigate whether students' attitudes, convenience flexibility, and school support might influence the university students' continuance intention through satisfaction with e-learning. The central focus of this investigation is to ascertain the potential impact of these factors on university students' continuance intention in the context of e-learning, all mediated through the prism of student satisfaction. In essence, this study seeks to unravel the underlying dynamics that shape the students' intentions to persist with e-learning, by examining the mediating role of satisfaction and how it bridges the gap between these influential factors and their commitment to the digital learning environment.

Students' Attitude

E-learning is a breakthrough in technology in the education field because E-learning plays a revolutionary role in removing geographical boundaries (Rafiq, Hussain, & Abbas, 2020). In other words, students no longer need to be in that particular institute to receive an education. This paradigm shift embodies the essence of accessibility and convenience. In the E-learning landscape, the world becomes a vast classroom, and the boundaries of time and place are rendered obsolete. Learners can access educational resources and interact with instructors and peers from any corner of the globe, thereby fostering a global learning community. This monumental transformation underscores the democratization of education, empowering students to craft their educational journeys in a manner that best suits their needs and aspirations.

However, the effectiveness of studying through the e-learning portal depends on the student's attitude toward this learning method. The efficacy of E-learning is intricately entwined with the attitudes and perspectives that students bring to this mode of learning. It is imperative to recognize that the most sophisticated E-learning platforms and meticulously crafted digital courses will not yield their full benefits if students do not embrace them with a positive and cooperative mindset. In essence, the success of E-learning hinges on the active participation and willingness of the students themselves. This underscores the profound impact of a student's attitude on the overall educational experience. Even the most advanced technological tools and well-designed learning resources cannot compensate for a lack of enthusiasm or cooperation on the part of the learners. An open and receptive mindset not only enhances a student's ability to absorb knowledge effectively but also contributes to a dynamic and engaging E-learning environment.

Suryani and Sugianingrat (2021) confirmed that one of the elements influencing university students' intention to continue and pleasure with their E-learning is their attitude. The benefits and drawbacks of adopting online learning environments for academic purposes influence students' attitudes toward e-learning (Valantinaitė & Sederevičiūtė-Pačiauskienė, 2020). In other words, students will show a positive attitude toward E-learning when there are more favorable factors of using this learning method such as having a comfortable study environment. COVID-19 might be one of the factors that affect undergraduate students' attitudes toward a quick transition to an online learning environment were evaluated (Unger & Meiran, 2020). Hence, positive attitudes given by university students toward E-learning will increase the continuance intention.

H1: Student attitude is positively related to continuance intention on E-learning.

H5: Student attitude is positively related to satisfaction with E-learning.

Convenience Flexibility

Another advantage of e-learning is its convenience and adaptability. Due to the flexibility of online learning, students can become lifelong learners without being hindered by rigid schedules (Rajeh et al., 2021). This adaptability means that learners can mold their educational experiences to fit their individual lifestyles, obligations, and personal preferences. Gone are the days of adhering to fixed class hours; instead, students have the autonomy to access and engage with educational content when it aligns best with their own routines. This not only accommodates those who are juggling work, family, or other commitments but also empowers individuals to chart their unique educational journeys, whether they wish to explore new interests or enhance their existing skills. Particularly designed digital learning environments, or E-learning, can make it possible for students to learn at their own speed, location, and time. They can increase student involvement and lead to more satisfying and competent learning results (Kumar & Sharma, 2021). It can be said that convenience flexibility is among one of the factors that affect the satisfaction of university students with E-learning (Kee et al., 2021). To rephrase it, university students have a higher continuance intention toward E-learning if they agree that E-learning brings convenience and flexibility.

H2: Convenience flexibility is positively related to continuance intention on E-learning.

H6: Convenience flexibility is positively related to satisfaction with E-learning.

School Support

In recent years, several universities have gradually become more open to e-learning. This shift represents a significant transformation in the landscape of higher education, marking a departure from traditional, classroom-based learning models. Universities, once entrenched in conventional teaching methods, have increasingly recognized the vast potential that e-learning holds for both educators and students alike. This evolving openness to e-learning reflects a broader acknowledgment of the need to adapt and innovate in the face of changing educational landscapes and technological advancements. As the world becomes more interconnected and digital technology continues to reshape various facets of life, universities are proactively seeking ways to harness the benefits of e-learning. This transition not only enhances the accessibility of education but also offers the flexibility that can cater to a wider range of learners, regardless of geographical or time constraints. Universities are now incorporating it into their instruction to meet a variety of learning needs and provide more interactive materials that make it simple to obtain knowledge (Ayu, 2020).

Studies conducted by prior researchers have shown a significant relationship between school support and continuance intention (Almusharraf & Khahro, 2020). The design of the online learning system received generally positive feedback from students. But stated problems included a lack of tutor help and having technical troubles in certain groups (Rajabalee & Santally, 2020). Among the notable challenges cited were concerns about the availability of tutor support. Some students expressed a desire for more comprehensive and readily accessible assistance, signaling the importance of effective guidance and mentorship in an online learning environment. Additionally, technical issues emerged as a recurring concern, particularly within specific groups of students. The presence of such challenges underscores the vital importance of not only robust technological infrastructure but also the provision of technical support and resources to ensure a seamless online learning experience for all. All these issues arise due to a lack of school support. Schools should provide assistance such as basic E-learning technical courses for lecturers and online learning resources to encourage university students to use online learning platforms. Nevertheless, schools' support can directly affect the university students' pleasure with E-learning, ultimately determining the continuance intention of university students on E-learning.

H3: Schools' supports positively relates to continuance intention on E-learning.

H7: Schools' supports positively relates to satisfaction with E-learning.

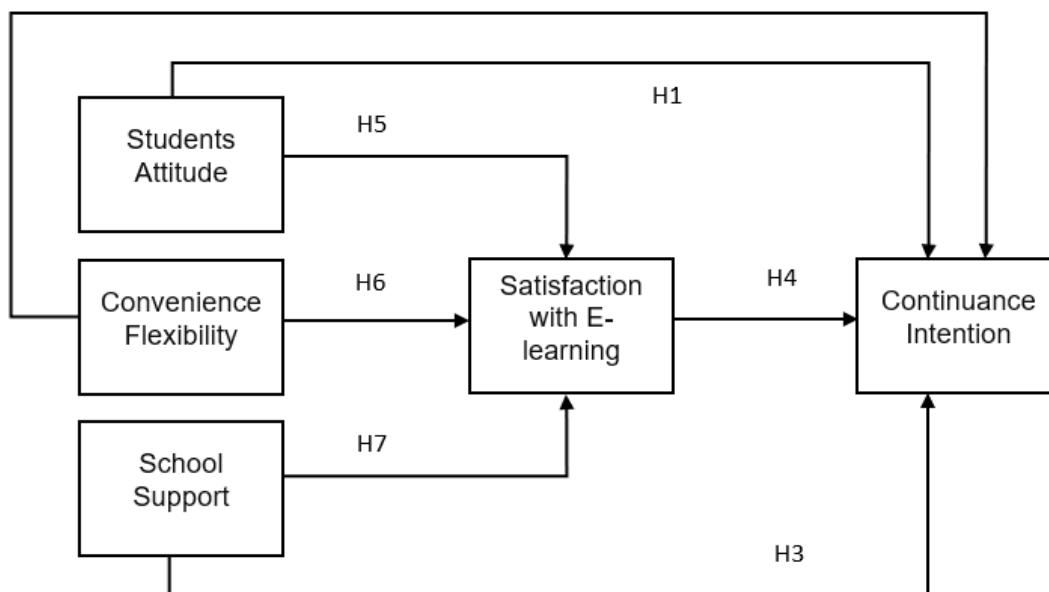
Satisfaction with E-learning

The prevalence of online learning in educational research and university teaching and learning has enhanced the scholarly interest in students' satisfaction with e-learning practices increased over time. This growing fascination among researchers, educators, and institutions reflects the profound transformation in the educational landscape, as online learning has become an integral and enduring component of contemporary academia. As the digital realm continues to expand and evolve, so does the scrutiny of students' satisfaction with e-learning. This emphasis on understanding the dynamics of e-learning satisfaction encompasses a wide array of dimensions, including instructional design, technology usability, engagement, and overall learning experiences. The heightened attention to these facets underscores the significance of providing students with a fulfilling and effective e-learning environment that caters to their diverse needs and expectations.

Many factors have been provided as the consequences of studies on the effectiveness of e-learner satisfaction (Erdel, 2022). University students' continuance intentions to use E-learning will likely be directly influenced by their level of satisfaction with it. In other words, if they are enjoying the vibe of the e-learning system, university students will prefer to use this study platform. However, if they are not happy with the E-learning system, university students will stop using this platform for their studies. The link between satisfaction with e-learning and continuance intention has been proven significant and positively related by Almusharraf & Khahro (2020). Their study unequivocally established that the level of student satisfaction with e-learning is not just significant but also distinctly positively related to their intention to persist in utilizing these platforms for their educational journey. This empirical evidence underscores the central role that satisfaction plays in shaping the students' decision to continue embracing the benefits of e-learning, further emphasizing its pivotal position within the realm of online education.

H4: Satisfaction with E-learning is positively related to continuance intention on E-learning.

Figure 1. Research Framework. A total of 7 hypotheses were formulated.



RESEARCH METHOD

Sample and Procedure

Researchers have used primary and secondary data to gather data in this research. For primary data, researchers conducted an online survey through Google Forms to get more information about university students' continuance intention toward e-learning systems during the post-pandemic of coronavirus COVID-19 in Malaysia and Indonesia. The target respondents of the research were university students of Universiti Sains Malaysia and Universitas Brawijaya. 160 responses were collected by distributing the questionnaire on social media platforms like Telegram and WhatsApp. The data collected will be analyzed using IBM SPSS Statistics software, descriptive and multiple regression analysis. Additionally, secondary data used in this research included articles, journals, and other internet sources.

Table 1. Demographic Profile

Response	Frequency	Percentage (%)
Gender		
Male	81	50.6
Female	79	49.4
Institute		
Universitas Briwijaya	69	43.125
Universiti Sains Malaysia	91	56.875
Age		
18-22	153	95.6
23-27	7	4.4
27 above	0	0.0
Education Level		
Bachelor of Degree	150	93.75
Diploma	8	5
Master Degree	2	1.25

Measures

Table 1 depicted the summarized respondents' demographics. Most of the respondents are male (50.6%) while 56.875% of the respondents are from Universiti Sains Malaysia. Besides, most of the respondents (95.6%) are between 18 to 22 years old and 93.75% of them are pursuing Bachelor of Degrees. There are six sections in this questionnaire: the demographic of respondents, students' attitude, convenience flexibility, school support, satisfaction with E-learning, and continuance intention. A 5-point Likert scale (1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, and 5 = strongly agree) was developed for this questionnaire. This questionnaire aims to indicate the level of agreement or disagreement by the respondents with each statement.

Continuance Intention

A 3-item scale was utilized to assess the willingness of university students to keep using E-learning ($\alpha = 0.590$). These scales were developed by Abdullah et al. (2022). The example items are "I will continue using e-learning in the future" ($\alpha = 0.738$), "I will recommend my friends to use e-learning" ($\alpha = 0.742$), and "I suggest using e-learning as the future direction" ($\alpha = 0.743$).

Students' Attitude

There are 3-item scale were adapted from Suryani and Sugianingrat (2021) to evaluate students' attitudes ($\alpha = 0.754$). The sample items are "E-learning programs are easy to follow" ($\alpha = 0.785$), "E-learning programs reduce stress in learning" ($\alpha = 0.852$), and "E-learning programs are productive in completing tasks" ($\alpha = 0.841$).

Convenience Flexibility

The 4-item to assess convenience flexibility ($\alpha = 0.553$) was adapted from Kee et al. (2021). The scale items included "I can attend online classes anytime and anywhere with e-learning" ($\alpha = 0.544$), "I can access the notes anytime and anywhere with e-learning" ($\alpha = 0.668$), "I can more easily achieve the course learning objectives with e-learning" ($\alpha = 0.715$), and "I can interact with my peers and lecturers anytime and anywhere with e-learning" ($\alpha = 0.689$).

School Support

The 5-item scale to evaluate school support ($\alpha = 0.686$) was adapted from Almusharraf & Khahro (2020). The sample items are "I am satisfied with the school counselor's mental or social support" ($\alpha = 0.653$), "I am satisfied with staff responsiveness to technical support during COVID-19" ($\alpha = 0.798$), "I am satisfied with my academic advisor's follow-up and support" ($\alpha = 0.573$), "During online course activities, I am satisfied with the lecturers' guidance and follow-up" ($\alpha = 0.633$), and "I am satisfied with the level of support received from lecturers during the COVID-19" ($\alpha = 0.728$).

Satisfaction with E-learning

The 4-item scale to evaluate students' satisfaction ($\alpha = 0.809$) with E-learning was adapted from Kee et al. (2021). The scale items included "I am satisfied that using e-learning for the study is effective" ($\alpha = 0.849$), "I am satisfied with the online platform used in the e-learning process" ($\alpha = 0.807$), "I am more satisfied with e-learning compared to face-to-face classes" ($\alpha = 0.833$), and "I am satisfied with e-learning is useful for gaining knowledge and skills" ($\alpha = 0.769$).

RESULTS

Table 2. Descriptive Statistics, Cronbach's Coefficients Alpha, and Zero-order Correlations for All Study Variables.

Variables		1	2	3	4	5
1	Student Attitude	0.75				
2	Convenience Flexibility	.39**	0.55			
3	School Support	.35**	.39**	0.69		
4	Satisfaction with E-learning	.38**	.56**	.50**	0.81	
5	Continuance Intention	.33**	.46**	.42**	.61**	0.59
Mean		4.37	4.48	3.90	4.15	4.12
Standard Deviation		0.62	0.39	0.48	0.61	0.54
No. of Items		3	4	5	4	3

Note: N=160; * $p < .05$, ** $p < .01$, *** $p < .0001$. The diagonal entries indicate Cronbach's coefficients alpha

Based on table 2 the reliability test of Student Attitude (X1) produces a Cronbach Alpha value of .754, Convenience Flexibility (X2) is .553, School Support (X3) is .686, Continuance Intention (Y) is .590, and Satisfaction about E-learning (Z) is .809, therefore can be concluded that all of these instruments are reliable because they have a Cronbach's Alpha value above 0.50.

Regarding answering the first section: Student Attitude, students reported a mean of 4.377, which means students agree and are highly satisfied. In the second section, the result shows a mean of 4.48, which means students are also delighted and agree with the researcher's statement. In section three, some students answered with (3/neutral), but the mean shows 3.90, which means students were satisfied with school support while online learning began. Sections four and five shows mean of 4.15 and 4.12, which indicated students were highly satisfied using e-learning and students will continue using e-learning in the future.

The requirements of the questionnaire can be "legitimate" if the results of the correlation coefficient r count $> r$ table, or the significant value of each question item < 0.05 . Therefore, we can conclude all questions on all variables have r count $> r$ table (.1543) so the data on all items on the variables are valid. This questionnaire instrument can be used to conduct research.

The regression equation's relationship between two or more variables is determined using the summary model's result. The regression model is very good, as the significant number of 0.000 indicates that it is significant, as shown in the summary model table. The model summary table's R Square value of 0.410.

In the coefficient section table, the output of regression model 1 shows that the variable significance value is $X_1 = 0.055$ higher than 0.05, $X_2 = 0.000$ lower than 0.05, and $X_3 = 0.000$ lower than 0.05. The table of the summary model demonstrates that the regression model is very good because the significance number is 0.000, indicating that it is significant. These results conclude that regression model 1 is not significant to Z if variable X_1 is not significant to Z. The model summary table's R Square value of 0.410 indicates that X_1 , X_2 , and X_3 have a 41 percent impact on Y. Satisfaction with e-learning with a beta value of 0.450 is the most influencing factor impacting the continuance intention.

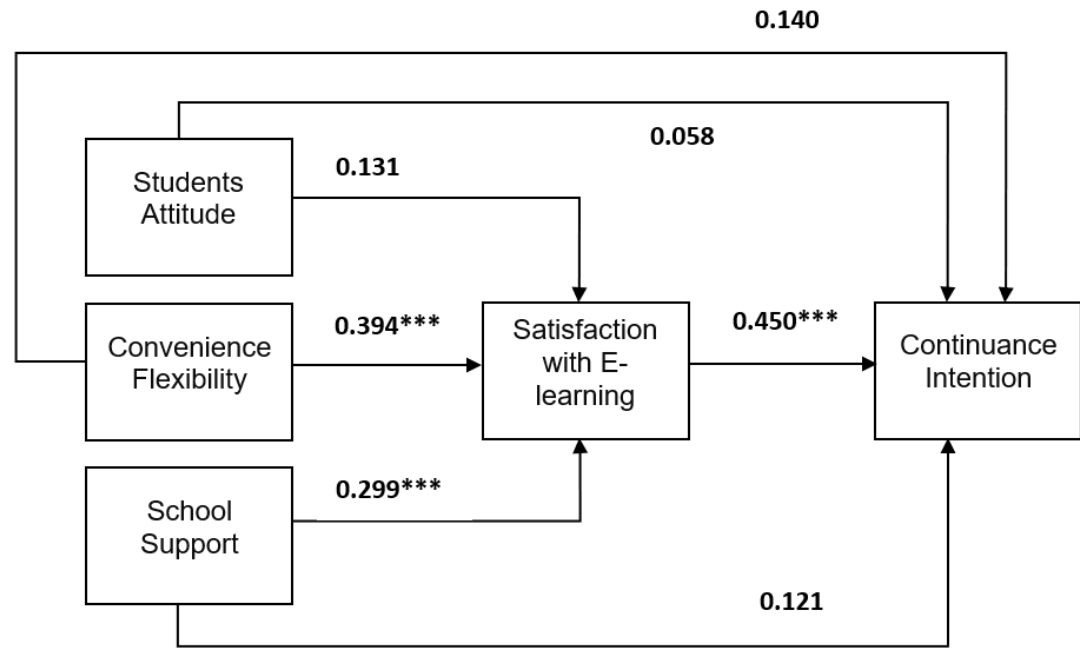
The coefficient section table's output from regression model 2 reveals that the variable significance values are $Z=0.000$ less than 0.05, $X_1 = 0.406$ more than 0.05, $X_2 = 0.072$ more than 0.05, and $X_3 = 0.100$ more than 0.05. A regression assessment was carried out for the purpose of this study and revealed that there is a significant relationship between convenience flexibility and online school support positively related to satisfaction with e-learning. These findings conclude that the variables X_1 , X_2 , and X_3 of the regression model 2 are not significant to Y, and that variable Z has a significant effect on Y. Additionally, there is a significant connection between continuance intention e-learning and satisfaction with e-learning. This indicates that H_4 , H_6 , and H_7 are accepted while H_1 , H_2 , H_3 , and H_5 are rejected.

Table 3. Summary of Regression Analysis

Variables	Continuance Intention	Satisfaction about E-learning
Student Attitude	.058	.131
Convenience Flexibility	.140	.394***
School Support	.121	.299***
Satisfaction E-learning	.450***	
R^2	0.410	0.422
F Value	26.952	37.957
Durbin-Watson Statistic	1.149	1.134

Note: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Figure 2. Hypothesized Model



DISCUSSION

This research paper is carried out to explore the determinants that influence university students' continuance intention toward e-learning systems in Malaysia and Indonesia during the post-pandemic phase. Based on the findings of this study, university students' satisfaction with e-learning, convenience flexibility, and school support significantly influence their continuance intention to use e-learning systems in the future. Nevertheless, only the university students' satisfaction with e-learning directly influences the continuance intention. In contrast, students' satisfaction with e-learning platforms operates as a mediator of the relationship between these two independent variables and continuance intention when convenience flexibility, and school support influence continuance intention. Additionally, this study exposes Malaysia's and Indonesia's reasons for continuing to use e-learning platforms after the pandemic.

According to this study, the intention to continue using e-learning is directly influenced by university students' pleasure with it. In essence, this research establishes a direct and compelling link between students' overall contentment and delight with the e-learning platform and their intention to continue using it. This connection underscores the paramount role of student satisfaction as a key determinant in shaping their continued engagement with e-learning, illuminating the importance of crafting an enriching and fulfilling digital learning environment to bolster students' ongoing commitment to this educational mode. This result is in line with Li and Fang's study (2019) of consumers' continuance intentions for mobile branded apps through satisfaction. Through perceived utility, expectations of the users may indirectly affect their pleasure with a system. This finding also discusses the significance of students' experience with the e-learning system when assessing their intention to continue using it.

Furthermore, convenient flexibility significantly impacts students' continuance intention toward e-learning systems. Students choose for convenience as e-learning is convenient for those who have a packed timetable. This particular aspect of convenience plays a pivotal role in shaping students' commitment to and intent to persist with online learning

platforms. The flexibility that e-learning affords, allowing students to tailor their educational experiences to their individual schedules and preferences, emerges as a driving force behind their decision to continue using these systems. This finding underscores the profound significance of adapting e-learning to the diverse needs of students, thereby ensuring that it remains a compelling and viable educational choice. By referring to the study of Luaran, Samsuri, Nadzri, and Rom (2014), the factor of convenience flexibility is the reason why university students are preferring e-learning rather than a face-to-face class. This is because by using the e-learning platform for studying, they can study at any time at any place and can reduce the time to interact with other friends. This finding is consistent with prior research on the continuance intention toward personal cloud services which has proven that technology readiness including convenient flexibility significantly influences customers' intention to continue using personal cloud services (Chen, Li, Liu, Yen, & Ruangkanjanases, 2021).

Additionally, Hasan, Ilias, Rahman, and Razak (2008) claim that school support is the element that most influences students' satisfaction with e-learning. The service quality of e-learning and student happiness is strongly correlated. Their study places considerable emphasis on the pivotal role of academic support and assistance in shaping students' overall satisfaction levels with the e-learning experience. The findings underscore the critical importance of institutions and educators actively facilitating and nurturing a supportive environment, wherein students feel valued, guided, and equipped to maximize the benefits of e-learning. This insight reaffirms the notion that the quality of support provided is integral to ensuring a positive and enriching e-learning experience for all students.

In the study of Harsasi and Sutawijaya (2018), there is a positive impact on student satisfaction by technology quality. Their study underscores the significance of the technological infrastructure in shaping students' contentment with the e-learning platform. The ease and efficiency with which students can upload activities and assignments using this digital platform contribute significantly to their approval of the e-learning initiative. In essence, this research underscores the pivotal role of technology in creating a seamless and user-friendly environment that not only fosters student satisfaction but also encourages their active participation in e-learning projects. The outcome of students' acceptance of e-learning will determine the technical challenges and the design of the e-learning system. The research on students' satisfaction with their online learning experiences during the COVID-19 epidemic is connected to and similar to this conclusion (Almusharraf & Khahro, 2020).

CONCLUSION

In conclusion, this research paper delved into the factors affecting university students' intention to continue using e-learning systems in Malaysia and Indonesia in the post-pandemic phase. The study revealed that satisfaction with e-learning, convenience flexibility, and school support all play a crucial role in influencing students' intention to persist with e-learning systems. Notably, satisfaction with e-learning directly impacts their intention, while satisfaction with e-learning platforms acts as a mediator when convenience flexibility and school support come into play. This research also sheds light on the reasons behind the continued use of e-learning platforms in Malaysia and Indonesia beyond the pandemic era.

The findings highlight the central role of student satisfaction in shaping their intention to continue using e-learning, aligning with previous research that links user satisfaction with continued use. Moreover, students' prior experiences with the e-learning system significantly contribute to their intention to persist with it.

Convenience flexibility emerged as another key determinant, with students favoring e-learning due to its ability to adapt to their busy schedules, consistent with earlier studies indicating that convenience is a driving factor for students' preference for e-learning over traditional in-person classes.

Finally, the importance of school support in fostering student satisfaction with e-learning was emphasized. The quality of service in e-learning is closely tied to student contentment, with technical ease and effective upload functionalities playing a pivotal role. This insight underscores the impact of students' acceptance of e-learning on technical challenges and system design, which is particularly relevant during the COVID-19 pandemic, as highlighted in related research.

In a nutshell, the e-learning system is still crucial in post-pandemic Malaysia and Indonesia. University students will still prefer e-learning systems if the proven influencing determinants toward their continuance intention are satisfied. This is uniform with our findings where students' satisfaction with e-learning, convenience flexibility, and school support are the primary factors influencing Malaysian and Indonesian university students' continuance intention towards e-learning systems during the post-pandemic phase. The universities should enhance students' satisfaction with e-learning by strengthening the convenience flexibility and school support. Hence, they can effectively affect students' continuance intention through these determinants during the post-pandemic period in Malaysia and Indonesia.

LIMITATION

This study has several limitations. This study's limitation was shown when most of the respondents stand for university students with an age range from 18 years old to 22 years old, which limits its generalizability. In addition, most of the respondents hold a bachelor of degree education level. Furthermore, it is uncertain how representative his statistics are of those who declined to take part in the study, as with any studies involving volunteers.

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DECLARATION OF CONFLICTING INTERESTS

There is no conflict of interest, according to the authors.

REFERENCES

- Abdullah, S. I. N. W., Arokiyasamy, K., Goh, S. L., Culas, A. J., & Manaf, N. M. A. (2022). University students' satisfaction and future outlook towards forced remote learning during a global pandemic. *Smart Learning Environments*, 9(1). doi:10.1186/s40561-022-00197-8
- Almusharraf, N., & Khahro, S. (2020). Students satisfaction with online learning experiences during the COVID-19 pandemic. *International Journal of Emerging Technologies in Learning*, 15(21), 246-267. doi:10.3991/ijet.v15i21.15647
- Ayu, M. (2020). Online learning: Leading e-Learning at higher education. *The Journal of English Literacy Education: The Teaching and Learning of English as a Foreign Language*, 7(1), 47–54. doi:10.36706/jele.v7i1.11515

- Chen, S.-C., Li, S.-H., Liu, S.-C., Yen, D. C., & Ruangkanjanases, A. (2021). Assessing determinants of continuance intention towards personal cloud services: Extending UTAUT2 with technology readiness. *Symmetry*, 13(3). doi:10.3390/sym13030467
- Das, A., Espinoza, M. C., Ming, C., Teoh, K. B., Lee, G. S., Jagdale, A., ..., & Malik, A. (2021). Effectiveness and efficiency of E-learning among students of higher education during the COVID-19 pandemic: A comparative study of Malaysia and India. *International Journal of Tourism & Hospitality in Asia Pacific*, 4(3), 89-101. doi:10.32535/ijthap.v4i3.1207
- Erdel, D. (2022). EFL students' online course satisfaction and attitudes towards E-Learning in post-pandemic hybrid education. *Kastamonu Education Journal*, 30(4), 717–727. doi:10.24106/kefdergi.1194042
- Hasan, H. F. A., Ilias, A., Rahman, R. A., & Razak, M. Z. A. (2008). Service quality and student satisfaction: A case study at private higher education institutions. *International Business Research*, 1(3), 163-175.
- Harsasi, M., & Sutawijaya, A. (2018). Determinants of student satisfaction in online tutorial: A study of a distance education institution. *Turkish Online Journal of Distance Education*, 19(1), 89–99. doi:10.17718/tojde.382732
- Hu, M. K., & Kee, D. M. H. (2022). Harmonising global higher education: Optimise learning in the new normal. In E. J. Valeau, R. L. Raby, & U. Gaulee. (Eds.), *Shaping a Humane World Through Global Higher Education: Pre-Challenges and Post-Opportunities During a Pandemic* (pp.130-140). Baltimore: STAR Scholars.
- Kee, D. M. H., Fozeli, A. D., Sani, N. A., Mustafa, A. S., Khalid, N. A., Chawla, P., & Ganatra, V. (2021). Students' satisfaction towards the use of e-learning during the global pandemic. *Asia Pacific Journal of Management and Education*, 4(3), 87–102. doi:10.32535/apjme.v4i3.1271
- Kumar, V., & Sharma, D. (2021). E-Learning theories, components, and cloud computing-based learning platforms. *International Journal of Web-Based Learning and Teaching Technologies*, 16(3), 1–16. doi:10.4018/ijwltt.20210501.0a1
- Li, C.-Y., & Fang, Y.-H. (2019). Predicting continuance intention toward mobile branded apps through satisfaction and attachment. *Telematics and Informatics*, 43. doi:10.1016/j.tele.2019.101248
- Luaran, J. E., Samsuri, N. N., Nadzri, F. A., & Rom, K. B. M. (2014). A study on the student's perspective on the effectiveness of using E-Learning. *Procedia - Social and Behavioral Sciences*, 123, 139–144. doi:10.1016/j.sbspro.2014.01.1407
- Munir, F., Anwar, A., & Kee, D. M. H. (2021). Online learning and students' fear of Covid-19 and online learning: Study in Malaysia and Pakistan. *International Review of Research in Open and Distributed Learning*, 22(4), 1-21. doi:10.19173/irrodl.v22i4.5637
- Pontoh, G. T., Linting, I., & Syamsuddin, S. (2021). The effectiveness of E-Learning system with design features as mediating variable. *Journal of International Conference Proceedings*, 4(2), 41-51. doi:10.32535/jicp.v4i2.1224
- Rafiq, F., Hussain, S., & Abbas, Q. (2020). Analyzing students' attitude towards E-Learning: A case study in higher education in Pakistan. *Pakistan Social Sciences Review*, 4(1), 367–380. doi:10.35484/pssr.2020(4-i)29
- Rajabalee, Y. B., & Santally, M. I. (2020). Learner satisfaction, engagement, and performances in an online module: Implications for institutional e-learning policy. *Education and Information Technologies*, 26, 2623-2656. doi:10.1007/s10639-020-10375-1
- Rajeh, M. T., Abduljabbar, F. H., Alqahtani, S. M., Waly, F. J., Alnaami, I., Aljurayyan, A., & Alzaman, N. (2021). Students' satisfaction and continued intention toward e-learning: a theory-based study. *Medical Education Online*, 26(1). doi:10.1080/10872981.2021.1961348

- Sabeh, H. N., Husin, M. H., Kee, D. M. H., Baharudini, A. S., & Abdullah, R., (2021). A systematic review of the DeLone and McLean model of information systems success in an e-Learning context (2010-2020). *IEEE Access*, 9, 81210-81235, doi:10.1109/ACCESS.2021.3084815
- Suryani, N. K., & Sugianingrat, I. A. P. W. (2021). Student E-Learning satisfaction during the Covid-19 pandemic in Bali, Indonesia. *Jurnal Economia*, 17(1), 141–151. doi:10.21831/economia.v17i1.33196
- Ullah, M. S., Khandakar, M. S. A., Aziz, M. A., & Kee, D. M. H. (2022). Technology enabling the new normal: How students respond to classes. *The International Review of Research in Open and Distributed Learning*, 23(4) 35-56. doi:10.19173/irrodl.v23i4.6295
- Unger, S., & Meiran, W. (2020). Student attitudes towards online education during the COVID-19 viral outbreak of 2020: Distance learning in a time of social distance. *International Journal of Technology in Education and Science*, 4(4), 256–266. doi:10.46328/ijtes.v4i4.107
- United Nations Educational, Scientific, and Cultural Organization (UNESCO). (2020, March 24). COVID-19 Educational Disruption and Response. Retrieved from <https://www.unesco.org/en/articles/covid-19-educational-disruption-and-response>
- Valantinaitė, I., & Sederevičiūtė-Pačiauskienė, Ž. (2020). The change in students' attitude towards favourable and unfavourable factors of online learning environments. *Sustainability*, 12(19). doi:10.3390/su12197960
- World Health Organization (WHO). (2020, 27 April). Archived: WHO Timeline - COVID-19. Retrieved from <https://www.who.int/news/item/27-04-2020-who-timeline---covid-19>
- Yekefallah, L., Namdar, P., Panahi, R., & Dehghankar, L. (2021). Factors related to students' satisfaction with holding e-learning during the Covid-19 pandemic based on the dimensions of e-learning. *Heliyon*, 7(7). doi:10.1016/j.heliyon.2021.e07628