



JURNAL PEMBANGUNAN SOSIAL

<https://e-journal.uum.edu.my/index.php/jps>

How to cite this article:

Jaafar, J. R., Poongavanam, N., Yee, L. S., & Ramalu, J. C. (2023). Factors influencing the intention to use computer technology for e-learning among university students. *Jurnal Pembangunan Sosial*, 26. 1-23. <https://doi.org/10.32890/jps2023.26.1>

FACTORS INFLUENCING THE INTENTION TO USE COMPUTER TECHNOLOGY FOR E-LEARNING AMONG UNIVERSITY STUDENTS

**¹Juliana Rosmidah Jaafar, ²Nalinah Poongavanam,
³Lee Su Yee & ⁴Jaya Chitra Ramalu**

Centre for Foundation and General Studies,
Infrastructure University Kuala Lumpur (IUKL), Malaysia

¹Corresponding author: juliana.rosmidah@gmail.com

Received: 27/04/2023 Revised: 31/05/2023 Accepted: 25/07/2023 Published: 31/7/2023

ABSTRACT

The utilisation of gadgets and computer technology has become a significant aspect of e-learning. This condition requires students to use various online platforms for learning purposes. The current study aims to explore the potential factor in explaining the intention to use computer technology during e-learning among private university students. Online questionnaires were distributed to 174 university students from various programmes in a university in Selangor. The items in the questionnaire covered three independent variables: perceived ease of use of technology, perceived usefulness of technology, and computer self-efficacy. The dependent variable is the intention to use computer technology in e-learning. Pearson Correlation was used to assess the relationship between the independent and dependent variables. Furthermore, Hierarchical Multiple Regression analysis was used to

determine the predictor of the intention to use computer technology. The result showed that the intention to use computer technology for e-learning was significantly related to technology's perceived ease of use, usefulness, and computer self-efficacy. However, when computer self-efficacy is controlled, students' intention to use computer technology is driven by their perceived notion that technology is easy to use and usefulness of the technology. The study concludes that when students perceive technology as easy to use and sense its practicality, they will have a stronger intention of using technology for learning. This research implies that a systematic strategy should be practised by integrating computer technology into teaching and learning in the current situation. Future studies could further explore the potential of differences across students' backgrounds towards e-learning.

Keywords: Intention student, computer, technology, e-Learning.

INTRODUCTION

Technology advancements have resulted in paradigm shifts in education, transforming the learning process and how students learn. Moreover, the development of advanced software associated with the progress of computer hardware technology has inspired educators to develop and implement new and innovative teaching strategies (Hopson et al., 2002). However, many challenges arise in using technology for learning among university students. For example, among the common challenges are the inconsistency of motivation in which students may experience a lack of interest or have poor focus while studying online.

The COVID-19 pandemic has transformed the conventional way of teaching and learning from face-to-face classes to online learning. Students may use various online platforms such as search engines and social media. Both educators and students must quickly adapt to the new norms of learning, which is e-learning. Tartavulea et al. (2020) also stressed that student adaptation is crucial in online learning. The adaptation comes with other physical challenges, such as a lack of internet coverage and the inappropriacy of gadgets and software to source relevant learning materials. In other words, the adaptation in learning during the pandemic by the university community is associated with the effectiveness of online education.

One of the key factors for academic success is a student's positive attitude while learning. This encourages the development of a strong intention towards learning. Over time, it will be a continual practice. With a strong attitude and behavioural control, students can picture themselves being consistent in executing any work related to assigned study tasks, such as assignments, quizzes, revisions, and group discussions. Ab Jalil et al. (2019) suggested that planning involves foreseen actions associated with the behavioural intention towards a specific task. One of the well-tested theories associated with this intention is the Theory of Planned Behavior (TPB) by Ajzen (1991), which speculates that intention is the proxy of actual behaviour. However, in this theory, 'intention' is not a stand-alone aspect. It is also shaped by attitude, subjective norms, and perceived behavioural control. With a stronger attitude, perceived social pressure and behavioural control, the intention to become a behaviour will likely be encouraged. Integrating new variables can improve the intention toward a behaviour (Ajzen, 1991). In education, new variables such as perceived university support or user innovativeness have been tested for the behavioural-intention (Kim et al., 2021; Su et al., 2021).

In a recent study by Maheswari (2021), self-efficacy was significantly related to the higher intention to study using online platforms among undergraduate students compared to postgraduate students. It indicates that the sense of self-confidence to study online reflects an excellent adaptation to online learning by younger students. One of the plausible reasons for this finding is self-efficacy, related to the conviction that one can successfully execute the behaviour necessary to produce the outcome (Fishbein & Cappella, 2006). In other words, control beliefs relate to the presence of factors that may facilitate or impede the use of technology.

TPB has been improvised with the other theories to augment understanding students' motivation in learning. For instance, the Technology Acceptance Model (TAM) is an information system theory that models how users accept and use technology. In TAM, it is suggested that when users are presented with new technology, the factors that influence the intention to use it are determined by the perceived usefulness and ease of use. As Saleh (2013) suggested, other factors, such as computer self-efficacy, could contribute to the model of TAM. Therefore, further investigation on self-efficacy as a moderator between the factors in TAM is needed to explain the

intention to use computer technology. The findings on computer self-efficacy as the moderator variable could benefit the e-learning process. Based on this justification, the following are the research objectives.

1. To identify the relationship between perceived ease of use, perceived usefulness of technology and computer self-efficacy towards the intention to use computer technology in e-learning among university students.
2. To identify the contribution of the predictor variables towards the intention to use computer technology for e-learning.

LITERATURE REVIEW

Education has recently moved from conventional teaching and learning to advanced teaching and learning using technology. Though classes are conducted in the classroom, educators have started using many teaching and learning educational software, including online resources, videos, and many other forms of technology (Yang, 2012; Wong et al., 2013a). It is not only practised during face-to-face classes but also during non-face-to-face learning. Therefore, students' ability to use technology is crucial as it enables them to understand what takes place in class. Currently, students living in urban areas are well-versed in using computers, laptops, smartphones, iPad, and tablets.

Besides, internet accessibility also plays an important role in students' lives. Any information needed can be easily obtained using any search engines students prefer. As a result, students can easily adapt to teaching and learning using technology. Furthermore, nowadays, learning is student-oriented, as many learning activities are designed for them to achieve required learning outcomes (Terrior & Aceti, 2012; Carini et al., 2006; Yang, 2012). In modern education, technology usage in learning is unavoidable for students. Since technology is a crucial element in online learning, especially during a pandemic, it is crucial to understand students' ability to use technology for learning. One of the most applied models is the Theory of Planned Behaviour (Ajzen, 1991) which focuses on intentional-behavioural control. The stronger intention towards an intended behaviour, the more likely that behaviour will be executed. Based on this theory, driven intentional behaviour is marked by the willingness and effort to exert a behaviour.

Studies on intentional behaviour have adopted the Technology Acceptance Model (TAM) to further explain the factors that lead to the willingness to use technology. The theory proposes that the willingness to use technology to gain information is driven by two main factors: the perceived usefulness of the technology and the perceived ease of use. In the context of e-learning, this model posited that perceived ease of use happens when a student believes that using a system is easy. The perception of learning online involves the belief that they can effortlessly handle any software, e-learning materials, tools, and educational technology. In this study, the term technology reflects university students' computer usage in e-learning activities.

Rizun and Strzelecki (2020) found that perceived ease of use can be an indicator to predict students' attitudes in their intention to use technology. Students who engage in distance learning find that information technology platforms and tools are essential throughout their learning process. Respondents in this research voiced that using computers and the internet is easy for them. Presently the COVID-19 pandemic has affected everyone globally. From the students' point of view, the situation enhanced the students' perception of learning with technology. The moment a student perceives using technology for learning is easy, and the intention to use technology for learning purposes comes naturally. A study by Hsin et al. (2015) on the English as a Foreign Language program in Taiwanese colleges reported that the acceptance of e-learning among students had shown a positive response.

A student with high intentions in using technology is related to compatibility, self-efficacy, and perceived ease of use. Mobile technology is the most recent method used to deliver knowledge and promote self-learning. Students can participate in various educational activities, thus creating more interest in learning further. Most of them are familiar with mobile devices and know how to operate them to a certain extent. Their primitive knowledge of using mobile devices will provide an easier pathway for them to handle online classes and class activities via mobile technology. When students have experienced how easy it is to use technology for learning, their intention will increase. Students can use their mobile devices to assess class notes, materials, and videos, open online resources, share information with classmates, have forum discussions, and do online assessments (Seliaman & Turki, 2012). Students will perceive the communication

platform as easy to use when the communication platform is good. Friends, classmates, and lecturers can guide them if they face any problems. This gives the impression that it is easy to use technology for learning. Consequently, students' acceptance of perceived ease of use will increase their intention to use more technology-based devices and platforms during learning.

On the other hand, the other aspect of this model, the perceived usefulness, can influence students' decision to employ technology for learning. Perceived usefulness is the student's confidence and belief that technology can improve their performance in a given task (Hayashi et al., 2004). Study by Zhai and Shi (2020) demonstrated that students perceived the usefulness of mobile technology had significantly brought positive learning outcomes in Physics. This also aligns with the previous study Park et al. (2012) conducted, where mobile technology's perceived usefulness aligns with the TAM module. Furthermore, they also found a significant relationship between the frequency of usage and the perceived usefulness of mobile technology.

The perceived usefulness of technology has contributed highly to students' learning outcomes. When students believe using technology is advantageous to them, habitually, their intention to use technology will be embedded in them. Furthermore, Zhai and Shi (2020) posited that perceived usefulness among students showed a positive relationship between students' performance and learning via technology. This induces the idea that using technology is useful. Therefore, it creates the intention in a person to use technology in their learning.

Similarly, Hassanein et al. (2010) reported that perceived usefulness by students creates better performance in them. The study suggested that using mobile technology for studying allows students to decide what they want to learn and how they want to learn. Also, they can set schedules for their learning activities. Findings by Teo and Zhou (2014) support that the perceived usefulness of technology is a significant factor in students' intention to use technology. If a student has strong knowledge and the ability to use technology, he will believe technology is useful in achieving the desired learning outcomes. Subsequently, it will strengthen the intention to use technology in learning. In addition, research by Rizun and Strzelecki (2020) demonstrated that perceived

usefulness strongly influences an individual's intention to accept or not accept the use of technology for their learning. According to Martinez (2020), during the COVID-19 pandemic, the whole world ventured into distance learning. Most classes were conducted online. Students had no option whether they wanted to use technology or not. It became the norm for everyone. Students need to learn and decide which technology is useful for them. Once they can identify this, the rate of perceived usefulness of technology will increase. Finally, the perceived usefulness of technology can influence students' intention to use technology for learning.

Self-efficacy in TAM is an element that displays an individual's ability to accomplish a task or job (Hayashi et al., 2004). Specifically, the recognition of using a computer or computer self-efficacy was tested in TAM by previous studies (Teo & Zhou, 2014; Hayashi et al., 2004). The term refers to an individual's acceptance of individual ability to use the computer to complete a task. Also, computer self-efficacy may not focus on the ability gained through experience but stresses the solid belief for executing a specific behaviour related to technology and gadgets.

During the current pandemic, teaching methods have changed and require students to have self-confidence in using technology for learning. In higher learning institutions, teaching methods with virtual learning environments are vigorously done to enable students to focus in class. Thus, this condition leads to the continuous growth of virtual learning environments, which depends on technology usage. University students must adapt to gadgets and cloud technology throughout their learning process. In line with Abdullah and Mustafa's (2019) suggestion, computer self-efficacy is the critical competency for students to learn in a technology-enhanced environment. Furthermore, as Terrion and Aceti (2012) reported, many students are constantly connected to the internet through smartphones, enabling them to access information and navigate through available technology. In addition, a study by Seppala and Alamaki (2003) on mobile learning for educational activities found that 98 percent of the university population have cell phones which contribute to their daily activities.

The application of computer self-efficacy in TAM shows diverse results. Previous studies showed a relationship between computer

self-efficacy and students' intention to use technology (Hill et al., 1978; Teo & Zhou, 2014; Thongsri et al., 2020). For example, research conducted by Teo and Zhou (2014) revealed that students with higher scores on computer self-efficacy showed a stronger intention to use technology as a learning tool. In addition, the study also reported that computer self-efficacy served as the basis for students to perceive learning using technology as easy and useful. However, not all research supports the idea of computer self-efficacy towards using technology for learning. In a study done by Hayashi et al. (2004) on the role of computer self-efficacy in predicting the usage of an e-learning system, it is reported that there is no significant relationship between these aspects. Hayashi et al. (2004) suggested that prior knowledge is crucial in using technology to support the finding. Similarly, other researchers argue that computer self-efficacy also depends on factors such as computer literacy and exposure to technology (Zainab et al., 2017). Notably, one may not be confident in using a computer without having prior knowledge of doing so. Consequently, this might weaken the intention to use the computer.

To summarise, the intention to use technology for learning is a significant factor that helps students adapt to the current learning practice. Furthermore, the intention could serve as a proxy aspect to the actual behaviour. To explain more about the intention of using technology, TAM has suggested two variables: perceived ease of use and perceived usefulness. These two components motivate students to have a stronger intention in technology usage. By integrating new aspects related to student factors, such as self-efficacy, which resembles self-confidence, more understanding of the student's motivation to use the internet as a learning platform could be gained.

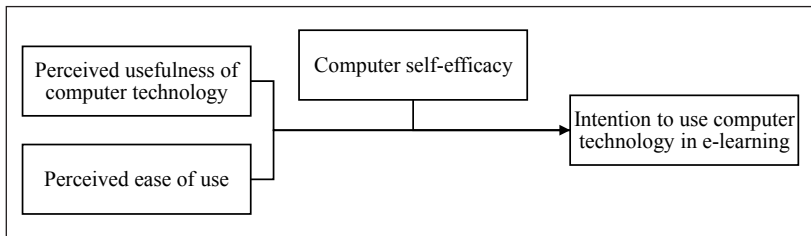
Conceptual Framework

This study speculates the intention for online learning among university students. The three motivation factors are perceived ease of use, perceived usefulness of technology and computer self-efficacy (Figure 1). In short, when students perceive that the technology is easy to use, it brings many benefits, and they are confident in using them. Therefore, these aspects will motivate them to use technology during online learning. Moreover, the motivation factors towards the intention to use technology may be due to computer self-efficacy among university students. Students who believe they can use the

computer or any learning device may strengthen their perception of using technology as an easy and helpful means during the learning process.

Figure 1

Conceptual Framework on the Intention to Use Technology in Learning



Hypotheses of the Study

Objective 1

Perceived Ease of Use

In this study, ‘the perceived ease of use’ follows the definition by Teo and Zhou (2014) on the degree to which the user believes that using technology relatively requires zero effort. Students who perceive difficulty using technology are less likely to engage in online learning. In short, regardless of the advancement of the system, the perception of technology’s ease of use plays a more significant role in deciding to use technology for learning. The hypothesis in this study is:

Ho1: There is no significant relationship between perceived ease of use and intention to use technology for learning among university students.

Perceived Usefulness of Technology

In a recent study, Zhai and Shi (2020) found that once a person perceives the feeling of being capable of using technology, it will lead to the frequent use of technology for learning, demonstrating a continuous behaviour of technology usage. Furthermore, the

perceived usefulness among students also indicated the openness to use technology, especially during online learning. Hence, university students' acceptance of technology and perceived usefulness could improve their learning process. Therefore, the hypothesis for this study is:

Ho2: There is no significant relationship between the perceived usefulness of technology towards the intention to use technology in learning among university students.

Computer Self-efficacy

Previous studies have reported that having computer self-efficacy relates positively to the usage of technology in learning among university students (Buabeng-Andoh, 2020; Bao et al., 2013). The result of the studies indicated that students with confidence in using technology would perceive themselves as having a level of computer self-efficacy. In contrast, an individual with low computer self-efficacy will exhibit frustration or anxiety when dealing with online learning. Therefore, the following hypothesis to be tested in this study is:

Ho3: There is no significant relationship between computer self-efficacy towards the intention to use technology for learning among university students.

Objective 2

Past studies have supported the significance of the significant variables, namely as perceived ease of use, perceived usefulness of technology and computer self-efficacy toward the intention to use technology in their daily activities. For example, Huang et al. (2020) and Al Kurdi et al. (2020) have found that when individual perceived it is easy to use computer, they were more likely to use it. Another study conducted in a Malaysian university reported that the perceived usefulness of technology is a significant variable towards the intention to use technology during online learning (Al-Rahmi et al., 2018). As for the computer self-efficacy, Hayashi and colleagues (2004) defined this term as the belief in being able to use the computer. In a study done by Krause et al., (2017), they have reported the significance of having computer self-efficacy as crucial in helping people to learn effectively especially in 21st-century learning. Therefore, the following

hypothesis to test the influence of each independent variables toward the intention to use technology:

Ho4: There are no significant influences of the perceived ease of use, perceived usefulness of technology and computer self-efficacy towards the intention to use technology in learning among university students.

METHODOLOGY

Participants and Data Collection

Participants in this study were 174 students from a local university in Selangor Darul Ehsan, which consisted of both local and international students (119 male students; 55 female students). Due to cost controlling and time constraint in data collection, only one university was involved in this study.

Before the data collection started, the questionnaire containing specified research items was sent to the faculty research committee for approval. Once the approval was obtained, the students were invited to join the survey publicised through university advertisements. They were then provided with a link to the questionnaire. Interested participants had to answer a set of questionnaires via an online survey. The duration of data collection was four weeks, from January to February 2019, which is in line with IR 4.0, where education is transforming into e-learning. Random sampling was used in this study. During the four weeks of data collection, students were invited to participate in this study through the university's social media.

Overall, the population of the university students within the institution was approximately 2902 students, of which 174 participated as respondents (response rate of 6%). When data collection was carried out, engaging in online classes has yet to become the norm in the university. This resulted in a low response rate. The previous study reported items in this research showed an excellent reliability value, thus suggesting it is reliable to be used for further analysis.

Table 1 presents the background of the respondents in this study. Respondents in this study range from 18 to 35 years old (mean =21.34,

sd = 2.61). Participants in this study came from various backgrounds; Malay (n=19, 10.9%), Chinese (n=33, 19.0%), Indian (n=38, 21.8%) and others (n=84, 48.3%). Most of the respondents were undergraduates (n = 152, 87.4%) and those from foundation programs (= 22, 16.4%). The respondents were from various semesters (first semester, n=34, 19.5%; second semester, n=50, 28.7%; third semester, n=39, 22.4%; and fourth and above, n =51, 29.3%).

Table 1

Background of the Respondents

Aspect	N	Percentage (%)
Gender		
Male	119	68.4
Female	55	31.6
Race		
Malay	19	10.9
Chinese	33	19.0
Indian	38	21.8
Others	84	48.3
Programs		
Foundation study	22	12.6
Undergraduate	152	87.4
Current semester		
First	34	19.5
Second	50	28.7
Third	39	22.4
Four and above	51	29.3

Research Instrument

The questionnaire consists of sixteen items related to motivational factors towards the intention to use technology for learning. There are three independent variables: perceived ease of use of technology, perceived usefulness, and computer self-efficacy. The dependent variable in this study is the intention to use technology in learning. This study adapted and adopted items both for independent and dependent variables from previous literature (Huang et al., 2020; Teo & Zhou, 2014). Perceived ease of use of technology (4 items),

perceived usefulness of technology in learning (6 items), self-efficacy (3 items) and intention to use technology (3 items) were assessed using a Likert scale ranging from 1 = “strongly do not agree” to 5 = “strongly agree”. For stronger feelings about using technology, perceived usefulness and intention to use technology for learning were indicated by higher scores. Whereas for computer self-efficacy, the students’ robust confidence in using the computer was indicated by lower scores. Examples of items were as shown in Table 2.

Table 2

Example of Items

Intention to use technology:

I predict myself to use technology regularly in my study this semester.

Perceived Ease of Use:

For me functions of the computer are understandable.

Perceived Usefulness:

Using technology makes my presentation more interesting.

Computer Self-efficacy:

I could complete a task using the computer if there is a manual for reference.

The reliability test for each variable indicated the value for Alpha Cronbach, ranging from .817 to .894. The value suggested that the items were reliable and appropriate for further analysis (Table 3).

Table 3

Reliability Value for the Variables (Alpha Cronbach)

Variables	Alpha Cronbach value
Intention to Use Technology	.894
Perceived Ease of Use	.866
Perceived Usefulness	.888
Computer Self-efficacy	.817

Statistical Analysis

The data were analysed using SPSS (version 22). Inferential analysis was used to answer the study’s objective and test the hypotheses. Hence, the Pearson Correlation analysis and Hierarchal Multiple

Regression analysis (enter method) were employed. Using the enter method in regression analysis will allow the researcher to control and determine the unique contribution from each independent variable in a separate block.

RESULTS

The current study found the respondents' mean score for each variable in the descriptive analysis (Table 4). The score indicated a strong intention to use technology in learning ($M=4.18$, $SD=.08$), perceived ease of use ($M=4.17$, $SD=0.76$), and perceived usefulness of the technology ($M=4.32$, $SD=.70$). As for computer self-efficacy, a lower total score indicated higher self-confidence in using technology for learning, exhibited by this current study ($M=1.93$, $SD=.81$).

Table 4

Mean and Standard Deviation (SD) for Variables

Variables	Mean	SD
Intention to use technology in learning	4.18	0 .08
Perceived ease of use	4.17	0.76
Perceived usefulness of the technology	4.32	0.70
Computer self-efficacy	1.93	0.81

4.1 Factors Towards the Intention to Use Technology for Learning

Factors relating to the intention to use technology for learning were accessed through the Pearson Correlation analysis. Based on the analysis, the result reflected that the choice to use technology among the respondents was significantly related to their perception of the easiness of using technology in learning. Apart from that, when the respondents perceived that the technology could benefit their learning (usefulness), this aspect is correlated with their intention to use technology during learning. Finally, based on the Pearson Correlation analysis, the result showed a significant negative relationship with the intention to use technology. This indicated that respondents with a low score on computer self-efficacy have a stronger intention to use technology in their study. The results indicated that all variables significantly correlate to university students' intention to use technology (Table 5).

Table 5

Factors toward the Intention to Use Technology in Learning

Variables	Intention
Perceived ease of use	.643**
Perceived usefulness	.602**
Computer self-efficacy	-.419**

** . Correlation is significant at the 0.01 level (2-tailed).

4.2 Predictor Towards the Intention to Use Technology for Learning

In this study, the result from the Hierarchal Multiple Regression analysis in Table 6 showed 44.0 percent of the variance towards the intention to use technology in learning after controlling computer self-efficacy [$F = (3, 170) = 44.59, p < .001$]. The finding indicated that respondents' perceived ease of use ($B = .53$) and perceived usefulness ($B = .31$) predict the intention to use technology for learning after controlling computer self-efficacy. Specifically, the main predictor is the perceived ease of use, indicating that when the score of this aspect increased by 53.2 units, the intention to use technology in learning would increase by 1 unit. As for the perceived usefulness of technology, when the variable increases by 31.4 units, the dependent variable increases by 1 unit.

Table 6

Result of Hierarchal Multiple Regression to Predict the Intention to Use Technology in E-Learning among University Students (n=174)

Regression paths	B	t	p
Model 1			
Self-efficacy	-.43	-6.05	.001
Model 2 (controlling self-efficacy)			
Perceived ease of use	.53	4.75	.001
Perceived usefulness	.31	2.80	.006

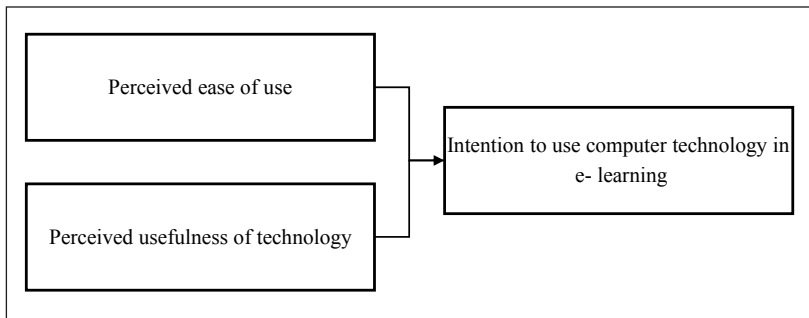
Model fit $R^2=.44$, Adjusted $R^2=.43$, $F (2, 170) = 55.59, p < .01$

Figure 2 illustrates the final predictor model for the intention among the respondents in the current study. This study suggests that when computer self-efficacy is controlled, the predictor model reported

that the intention to use technology is more significant when students perceive using technology as easy to use compared to perceived usefulness.

Figure 2

Model of Predictors toward the Intention to Use Computer Technology in E-Learning among University Students



DISCUSSION

This study aimed to determine the factors toward the intention to use computer technology among university students by evaluating their beliefs. A research model was developed based on the findings of prior literature on the Technology Acceptance Model (TAM). Three hypotheses were formulated from the research model to portray the relationships among the variables.

Results from Pearson correlation supported all hypotheses in this study. In this current study, the result indicated that perceived ease of use, usefulness, were found to be the related to the respondents' intention in using technology in learning when computer self-efficacy is controlled. This study suggested that when students perceive that computer technology is easy and useful, this situation will lead to a stronger intention to apply technology for learning. Apart from that, when they feel more confident in using technology, this aspect also contributes to the willingness to try using technology for learning and searching for information. These findings were consistent with previous study done by other researchers where perceived usefulness in using technology were reported to be a significant factor in

motivating university students to use technology (Macharia & Pelser, 2012; Wong et al., 2013b). This is also in-line with the idea of young millennials, techno-savvy learning online as a new norm requires students to engage more with technology (Huang et al., 2020).

Furthermore, as Saleh (2013) mentioned, self-confidence in using technology (computer self-efficacy) is one of the elements that could create more technology-savvy individuals. Students with stronger self-efficacy in using a computer will lead to the willingness to use technology as a learning method. As in this current study, factors that promote the intention to use technology for learning were significantly related to the three factors tested: perceived usefulness, perceived ease of use and computer self-efficacy.

However, in the analysis of the second objective, perceived ease of use and perceived usefulness explained 44 percent of the variance in intention to use technology. These results are in-line with what was presented by Kim and Kankanhalli (2009) and Venkatesh et al. (2011) that individuals' perception of the ease of use and usefulness of technology can have an impact on behavioural intention. In contrast with Saleh's (2013) suggestion, the current result showed that computer self-efficacy does not contribute to the intention to use technology among the respondents in this study. Result from Saleh (2013) is not unique as Sun and Gao (2020) also reported that in some context, the intention to use technology does not related with the internal factors. This might due to the other factors such as the environment and accessibility to the technology. However, these results contradicts with findings of previous studies where the researchers reported that computer self-efficacy had a direct and significant influence on the student's intention to use technology in learning (Chen et al., 2013; Tung & Chang, 2008).

Based on these results, it was suggested that perceived ease of use is related with users' perceptions about a particular system would strengthen the intention to use technology (Agarwal & Karahanna, 2000). This is due to the reason that once an individual feels that using a technology is easy, this perception could lead to the confidence in using the system. In the same vein, research done by Tahar, Riyadh et al. (2020) reported that once individual perceived a system in the internet or gadget is easy to use, it will strengthen the perception of readiness. Hence in the university setting, students' confidence in

using technology may increase their intention to use technology in learning.

Furthermore, students who perceived that the technology could bring more benefits in helping their learning process could lead to the motivation in using this platform more often. These benefits the students in term of searching information for their assignment effectively and sharing knowledge among the group members. Apart from this, the higher institution can support the students by establishing a platform for the students to use technology. A user-friendly support system in retrieving information to help them in doing assignments or searching for a previous final year project thesis could enhance their intention to use more technology in their learning process. Once the students experienced this beneficial support from the university, they may develop a positive attitude toward technology. A successful experience with technology will add to their interest, reinforcing their intention to use technology over time. The current result is implementing technology indents' learning environment to increase their activity. Lecturers could serve as the student's main source in using technology by providing guidelines for any applications used during an online class. In other words, the lecturers serve as their mentors. Besides that, this study could also be useful in determining the right technology infrastructure to be provided by the institution. Training and workshops can be conducted to teach students how to utilise technology fully in their study.

Based on this study, once the students feel comfortable using computer technology for learning, this situation could strengthen their intention to use it. Apart from this, perceived usefulness was also reported to impact the intention for e-learning. Therefore, institutions of higher learning should promote the factors that strengthen computer technology usage. In addition, higher learning institutions should also provide technical support and skills training on advanced applications to use computer technology for learning, such as web-based training to use the on-site courses for the students.

This study is subjected to two limitations. The study is limited to three variables tested in TAM which focus on perceived ease of use, perceived usefulness and computer self-efficacy (as a control variable) toward the intention to use computer technology. It is recommended to test other variables, such as peer influences to better understand the

factors influencing students' intention to use computer technology in e-learning. Second limitation is the data are retrieved from respondents in a single institution, therefore this study cannot be generalised into other university. However future study can be extended to multiple institutions to get more response from a different backgrounds and to have a holistic understanding on the motivation to use technology in learning for university students.

CONCLUSION

In conclusion, two major factors that contribute to the intention of students to use the computer technology are firmly based on perceived ease of use and perceived usefulness of the technology. The comfort in using the computer technology plays a crucial role in introducing digital tools for enhancing the student's learning experiences. New platform or software are blooming in the market according to the need and current trend. Nevertheless, these new technologies might not be helpful to the university students in term of e-learning if they were unaware of the benefits. Therefore, by strengthening the internal positive perception on the benefits of the technology, these aspects could help to prepare the students the current e-learning style. Consequently, following the current trend on the software or computer technology platforms, it will be helpful for students to follow the current trend using online methods such as chatting, playing games, drawing as well as mixing song or video as the learning methods. This will expose them to the computer technology as the learning medium.

ACKNOWLEDGMENT

The authors gratefully acknowledge all respondents involved in this study for their time and cooperation.

REFERENCES

- Ab Jalil, H., Ma'rof, A., & Omar, R. (2019). Attitude and behavioral intention to develop and use MOOCs among academics. *International Journal of Emerging Technologies in Learning (iJET)*, 14(24), 31-41.

- Abdullah, Z. D., & Mustafa, K. I. (2019). The underlying factors of computer self-efficacy and the relationship with students' academic achievement. *International Journal of Research in Education and Science*, 5(1), 346-354.
- Agarwal, R., & Karahanna, E. (2000). Time flies when you're having fun: Cognitive absorption and beliefs about information technology usage. *MIS Quarterly*, 24(4), 665-694.
- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179-211
- Al Kurdi, B., Alshurideh, M. T., & Salloum, S. A. (2020). Investigating a theoretical framework for e-learning technology acceptance. *International Journal of Electrical and Computer Engineering (IJECE)*, 10(6), 6484-6496.
- Al-Rahmi, W. M., Alias, N., Othman, M. S., Alzahrani, A. I., Alfarraj, O., Saged, A. A., & Rahman, N. S. A. (2018). Use of e-learning by university students in Malaysian higher educational institutions: A case in Universiti Teknologi Malaysia. *Ieee Access*, 6, 14268-14276.
- Bao, Y., Xiong, T., Hu, Z., & Kibelloh, M. (2013). Exploring gender differences on general and specific computer self-efficacy in mobile learning adoption. *Journal of Educational Computing Research*, 49(1), 111-132.
- Buabeng-Andoh, C. (2020). Exploring university students' intention to use mobile learning: A research model approach. *Education and Information Technologies*, 26(4).
- Carini, R. M., Kuh, G. D., & Klein, S. P. (2006) Student engagement and student learning: Testing the linkages*. *Research in Higher Education*, 47(1), 1-32.
- Chen, Y. C., Lin, Y. C., Yeh, R. C., & Lou, S. J. (2013). Examining factors affecting college students' intention to use web-based instruction systems: Towards an integrated model. *Turkish Online Journal of Educational Technology*, 12(2), 111-121.
- Fishbein, M., & Cappella, J. N. (2006). The role of theory in developing effective health communications. *Journal of Communication*, 56(1), 1-17.
- Gu, X., Zhu, Y., & Guo, X. (2013). Meeting the "digital natives": Understanding the acceptance of technology in classrooms. *Educational Technology and Society*, 16(1), 392-402.
- Hassanein, K., Head, M., & Wang, F. (2010). Understanding student satisfaction in a mobile learning environment: The role of internal and external facilitators. Paper presented at the 2010

- Ninth International Conference on Mobile Business and 2010 Ninth Global Mobility Roundtable (ICMB-GMR). <https://doi.org/10.1109/ICMB-GMR.2010.38>
- Hayashi, A., Chen, C., Ryan, T., & Wu, J. (2004). The role of social presence and moderating role of computer self efficacy in predicting the continuance usage of e-learning systems. *Journal of Information Systems Education*, 15(2), 139-154.
- Hill, T., Smith, N. D., & Mann, M. F. (1978). Role of efficacy expectation in predicting the decision to use advanced technologies: The case of computers. *Journal of Applied Psychology*, 72(2), 307-313.
- Hopson, M. H., Simms, R. L., & Knezek, G. A. (2002). Using a technology-enriched environment to improve higher-order thinking skills. *Journal of Research on Technology in Education*, 34(2), 109–119.
- Hsin, H. C., Shu, C. C., & Min, H. K. (2015). A study of EFL college students' acceptance of mobile learning. *Procedia - Social and Behavioral Sciences*, 176, 333-339.
- Huang, F., Teo, T., & Scherer, R. (2020). Investigating the antecedents of university students' perceived ease of using the Internet for learning. *Interactive Learning Environments*, 7, 1-17.
- Kim, E. J., Kim, J. J., & Han, S. H. (2021). Understanding student acceptance of online learning systems in higher education: Application of social psychology theories with consideration of user innovativeness. *Sustainability*, 13(2), 896.
- Kim, H. W., & Kankanhalli, A. (2009). Investigating user resistance to information systems implementation: A status quo bias perspective. *MIS Quarterly*, 33, 567–582.
- Krause, M., Pietzner, V., Dori, Y. J., & Eilks, I. (2017). Differences and developments in attitudes and self-efficacy of prospective chemistry teachers concerning the use of ICT in education. *Eurasia Journal of Mathematics, Science and Technology Education*, 13(8), 4405-4417.
- Macharia, J. K. N., & Pelser, T. G. (2012). Key factors that influence the diffusion and infusion of information and communication technologies in Kenyan higher education. *Studies in Higher Education*, 39(4).
- Maheshwari, G. (2021). Factors affecting students' intentions to undertake online learning: An empirical study in Vietnam. *Education and Information Technologies*, 1-21.
- Marakas, G., Yi, M., & Johnson, R. D. (1998). The multilevel and multifaceted character of computer self-efficacy: Toward clarification of the construct and an integrative framework for research. *Information Systems Research*, 9, 126-163.

- Margaryan, A., Littlejohn, A., & Vojt, G. (2011). Are digital natives a myth or reality? University students' use of digital technologies. *Computers and Education*, 56(2), 429-440.
- Martinez, J. (2020). Take this pandemic moment to improve education. Retrieved from EdSource: <https://edsources.org/2020/take-this-pandemic-moment-to-improve-education/633500>.
- Park, S. Y., Nam, M. W., & Cha, S. B. (2012). University students' behavioral intention to use mobile learning: Evaluating the technology acceptance model. *British Journal of Educational Technology*, 43(4), 592-605.
- Rizun, M., & Strzelecki, A. (2020). Students' acceptance of the COVID-19 impact on shifting higher education to distance learning in Poland. *International Journal of Environmental Research and Public Health* 2020, 17(18), 6468.
- Saleh, S. M. (2013). The self-efficacy in acceptance of information technology in public sector. *Asian Journal of Business and Management Sciences*, 2(9), 44-55. <http://repo.uum.edu.my/9460/>
- Seliaman, M. E., & Al-Turki, M. S. (2012). Mobile learning adoption in Saudi Arabia. *World Academy of Science, Engineering and Technology*, 6(9), 356-358.
- Seppala, P., & Alamaki, H. (2003). Mobile learning in teacher training. *Journal of Computer Assisted Learning*, 19(3), 330-335.
- Su, Y., Zhu, Z., Chen, J., Jin, Y., Wang, T., Lin, C. L., & Xu, D. (2021). Factors influencing entrepreneurial intention of university students in China: Integrating the perceived university support and theory of planned behavior. *Sustainability*, 13(8), 4519.
- Sun, Y., & Gao, F. (2020). An investigation of the influence of intrinsic motivation on students' intention to use mobile devices in language learning. *Educational Technology Research and Development*, 68, 1181-1198.
- Tahar, A., Riyadh, H. A., Sofyani, H., & Purnomo, W. E. (2020). Perceived ease of use, perceived usefulness, perceived security and intention to use e-filing: The role of technology readiness. *The Journal of Asian Finance, Economics and Business (JAFEB)*, 7(9), 537-547.
- Tartavulea, C. V., Albu, C. N., Albu, N., Diaconescu, R. I., & Petre, S. (2020). Online teaching practices and the effectiveness of the educational process in the wake of the COVID-19 pandemic. *Amfiteatru Economic*, 22(55), 920-936.

- Teo, T., & Zhou, M. (2014). Explaining the intention to use technology among university students: A structural equation modeling approach. *Journal of Computing in Higher Education*, 26(2), 124-142.
- Terrion, J. L., & Aceti, V. (2012). Perceptions of the effects of clicker technology on student learning and engagement: A study of freshmen chemistry students. *Research in Learning Technology*, 20, 1-11.
- Thongsri, N., Shen, L., & Bao, Y. (2020). Investigating academic major differences in perception of computer self-efficacy and intention toward e-learning adoption in Chi-na. *Innovations in Education and Teaching International*, 57(5), 577-589.
- Tung, F. C., & Chang, S. C. (2008). Nursing students' behavioral intention to use online courses: A questionnaire survey. *International Journal of Nursing Studies*, 45, 1299-1309.
- Venkatesh, V., Thong, J. Y., Chan, F. K., Hu, P. J. H., & Brown, S. A. (2011). Extending the two-stage information systems continuance model: Incorporating UTAUT predictors and the role of context. *Information Systems Journal*, 21(6), 527-555.
- Wong, K. T., Osman, R., Goh, Swee, C. P., & Rahmat, M. K. (2013a). Understanding student teachers' behavioural intention to use technology: Technology Acceptance Model (TAM) validation and testing. *International Journal of Instruction*, 6(1), 89-104.
- Wong, K. T., Teo, T., & Russo, S. (2013b). Interactive whiteboard acceptance: Applicability of the UTAUT model among student teachers. *The Asia Pacific Education Researcher*, 22(1), 1-10.
- Yang, S. (2012). Exploring college students' attitudes and self-efficacy of mobile learning. *The Turkish Online Journal of Educational Technology*, 11(4), 148-154.
- Zainab, B., Awais, B. M., & Alshagawi, M. (2017). Factors affecting e-training adoption: An examination of perceived cost, computer self-efficacy and the technology acceptance model. *Behaviour & Information Technology*, 36(12), 1261-1273.
- Zhai, X., & Shi, L. (2020). Understanding how the perceived