Proceeding of 2nd International Conference on Research and Development (ICORAD 2022)
Indonesia, November 05-06, 2022
ISSN:2828-4925
DOI: https://doi.org/10.47841/icorad.v1i2.46
Page:8-22

Predicting Intentions to Use Smart Education Technology during the COVID-19 Pandemic: The Case of Higher Education Students in Thailand

Supaprawat Siripipatthanakul [1], Pongsakorn Limna [2], Tanpat Kraiwanit [3]
Sutithep Siripipattanakul [4]

[1] Manipal GlobalNxt University, Malaysia
[2, 3] Rangsit University, Thailand
[4] Kasetsart University, Thailand
Corresponding email: drsupaprawat@gmail.com

Received: September, 11, 2022 Revised: October, 20, 2022 Accepted: November, 5, 2022

Abstract. This study aims to predict the intention to use smart education technology during the COVID-19 pandemic among higher education students in Thailand. The determinants of intention to use smart education technology adopt the technology acceptance model (TAM) through the mediating effect of student satisfaction. The online convenience sampling collected data from 238 higher education students in Thailand to confirm the theoretical framework. The data were analysed using SPSS Version 27 and the partial least square structural equation model (PLS-SEM). The findings support that the TAM model comprises perceived ease of use and perceived usefulness. Student satisfaction is a significant mediator between the TAM model and the intention to use smart education technology. However, the TAM model has no significant direct effect on the intention to use smart education technology. This study may benefit educators and instructors in improving the intention to use smart education technology by adopting the TAM model and student satisfaction. Moreover, the results could apply in any sector to improve the intention to use smart technology through predictors of the TAM model and mediating role of users' satisfaction.

Keywords: *Technology Acceptance Model (Perceived Usefulness and Perceived Ease of Use), Student Satisfaction, Intention to Use, Smart Education Technology, Higher Education*

INTRODUCTION

The advancement of new technologies allows learners to learn more effectively, efficiently, flexibly, and comfortably. Learners use smart devices to access digital resources via a wireless network and to immerse themselves in personalised and seamless learning. Smart Education is a concept that describes learning in the digital age, and it is gaining popularity (Zhu et al., 2016). The COVID-19 pandemic had a significant impact on many nations around the world. educational institutions were closed due to this pandemic to prevent the spread of the virus (Wen, & Kim Hua, 2020). Fear due to family lockdown, fear of education failure, and fear of losing social relationships are the most common threats that students and teachers/educators may face during the Coronavirus pandemic. These anxieties are associated with two crucial TAM theory factors: perceived ease of use (PEOU) and perceived usefulness (PU). It was demonstrated that data analysis techniques supported all of the hypothesised relationships of the conceptual model (Al-Maroof et al., 2020). During

ISSN:2828-4925
DOI: https://doi.org/10.47841/icorad.v1i2.46
Page:8-22

the COVID-19 pandemic, such applications were used to support distance learning, and smart mobile learning (M-learning) applications demonstrated several new benefits for higher education institutions (Almaiah et al., 2022). The emergency remote education context resulted in inconsistent educational outcomes. The utilisation of educational technology was predominantly positive, while personal adaptation was predominantly negative. It provides new insights for higher education institutions regarding potential actions, such as curating the learning experience with standard, institution-wide platforms, appropriate training for students and teachers, and appropriate remote evaluation practices (Oliveira et al., 2021). The Technology Acceptance Model (TAM) served as the primary framework for analysis, with system quality and e-learning experience added as external constructs to find a better model for enhancing the comprehension of students' intention to adopt technology in learning (Mailizar, Burg & Maulina, 2021). Learners' satisfaction with educational technology systems in higher education and a model combining multiple factors to explain learners' satisfaction with e-learning systems better. The technology acceptance model enhances learner satisfaction. Institutions and practitioners of educational technology adoption will find the research relating to the TAM model, student satisfaction, and intention to use technology to be beneficial (Safsouf, Mansouri & Poirier, 2020). Thus, this study investigates the relationship between the TAM model, student satisfaction and intention to use smart education technology among higher education students in Thailand adopting PLS-SEM to explain the model.

METHODOLOGY

Research Method

The data were collected using closed-ended questionnaires (Likert's Rating Scale). It was determined whether measuring instruments were reliable and accurate through testing. It is crucial to recognise that the validity of an instrument refers to how well it measures the researcher's conceptual framework or hypothesis (Siripipattanakul et al., 2022). Using a five-point Likert scale ranging from 5 (strongly agree) to 1 (strongly disagree), the primary variables in this study were rated (strongly disagree). According to Jandawapee et al. (2022), Napawut et al. (2022), and Sitthipon et al. (2022), the demographics of those who responded to the survey questions were determined. The questionnaire items about perceived usefulness, perceived ease of use, student satisfaction, and intention to use Smart Education technology were derived from Gros (2016) and Limna et al. (2022).

Population and Sample

Unknown was the target population of the study. The samples were Thai students enrolled in higher education in Thailand. The researchers conducted a conventional survey with a 95% level of assurance. Convenience sampling should be used to collect at least 200 cases (Taherdoost, 2016). Consequently, 238 respondents from Thailand's five distinct geographic regions were included in the data collection (over the Minimum requirement of 200 respondents).

Data Collection

The researchers collected data from five regions in Thailand (Northern, Eastern, Northeastern, Central and Southern-Western). In addition, self-administered surveys and

ISSN:2828-4925
DOI: https://doi.org/10.47841/icorad.v1i2.46
Page:8-22

convenience sampling were used. Before distributing online questionnaires, the researchers clarified the study's purpose and solicited the respondents' participation. The data was collected between August 1 and September 5, 2022.

Data Analysis

For descriptive statistical analysis (frequency and percentage), SPSS Version 27 was used to analyse the demographic characteristics of the respondents. The values for each variable and questionnaire item were computed using the mean and standard deviation. Following the recommendations of Phetnoi et al. (2021) and Jandawapee et al. (2022), Cronbach's Alpha was set at 0.6 to determine the main variables set's reliability (2022), following Bootsumran et al. (2022). The validity test was conducted using the factor loadings and set to 0.7. (2021). The researchers used a partial least square structural equation model (ADANCO 2.3) to validate the conceptual model and analysed the completed data to test the hypotheses, following the research of Jaipong et al. (2022), Limsangpetch et al. (2022), and Siripipattanakul et al. (2022).

RESULTS AND DISCUSSION

Partial Least Square Structural Equation Model (PLS-SEM)

The development of multivariate analysis techniques has transformed the empirical validation of theoretical concepts in social science and business studies. In structural equation modelling (SEM), a potent instrument for estimating conceptual models connecting two or more latent constructs has emerged. The applicability of partial least square structural equation modelling (PLS-SEM) in estimating a complex model is demonstrated using the philosophy of authenticity and the modelling assumptions methodology. The results validate PLS-SEM as a promising method for estimating complex hierarchical models in data analytics quality (Akter et al., 2017). Consequently, PLS-SEM permits the combination of explanation and prediction perspectives to model estimation, the primary concern in most of business and social science research in general and in many other disciplines (Hair et al., 2019; Kaewnaknaew et al., 2022).

Technology Acceptance Model (TAM)

Higher education students' learning habits have changed dramatically over the past two decades, due in part to the characteristics of the information and digital society, widespread broadband internet access, the proliferation of smart devices, and consequently, the availability of online mobile applications. In the 21st century, using eLearning systems in higher education is necessary. Hardware and software advancements periodically stimulate each other's development (Tick, 2019). Several theoretical models have emerged to investigate and explain the factors that lead people to accept, reject, or continue using new technology. The Technology Acceptance Model (TAM) receives empirical support for its ability to predict technology acceptance and adoption robustly and economically. Moreover, the TAM explains that a person's behavioural intention to perform specific tasks determines his or her performance of specified behaviour. Two specific variables are hypothesised to be the fundamental determinants of a user's acceptance: perceived usefulness and perceived ease of use (Wong et al., 2013). Components of the theory of acceptance model include the definitions of perceived usefulness and perceived ease of use (TAM). Perceived usefulness is the extent to which a student teacher believes that computer technology will improve his or her job performance in the classroom. There is evidence that teachers utilise technology

ISSN:2828-4925
DOI: https://doi.org/10.47841/icorad.v1i2.46
Page:8-22

when they believe it will improve their job performance, such as assisting students in achieving learning objectives, performing administrative duties, and managing students. Perceived ease of use is the extent to which the student teacher believes utilising computer technology will be effortless. Despite believing that technology is beneficial, they perceive its use to be too difficult, and its performance benefits are outweighed by the effort required to use it (Luan & Teo, 2009).

Student Satisfaction

Satisfaction is defined as the feelings of disappointment or pleasure that a person experiences after comparing the perceived outcome (or performance) of a product or service to their expectations. Student satisfaction is the favorability of a student's subjective evaluation of various educational outcomes. Student satisfaction occurs when actual performance meets or exceeds students' expectations (Limna et al., 2021). The learning experience, as a performance variable, should be directly related to satisfaction. It is debatable whether satisfaction and learning are synonymous. One typical contingency outcome assumed from a successful learning experience, and it can be argued, is that the student is satisfied with the experience. Satisfaction with course activities has frequently been included as a dependent variable in studies of distance education, computer-mediated communication, and Web-based courses (Marks et al., 2005). The COVID-19 outbreak has spawned a pandemic in every region of the globe. From one end of the globe to the other, the lifestyle of the human race has undergone a drastic and unpredictable transformation. The major unavoidable change in our lives is the shift from physical to online activities, particularly in the educational system. Transitioning from physical to online education cannot be simple for everyone (Haleem, Asim & Manzoor, 2021). Therefore, student satisfaction with educational technology is crucial. Student satisfaction in this study refers to the feelings of disappointment or pleasure of the students that reflect the experiences of using Smart Education Technology among higher education students.

Intentions to Use Smart Education Technology

The use of innovative teaching technologies in the modern education system is required to effectively organise students' educational processes. Smart Education is a type of education that is becoming more popular and accepted by young people in today's digital age. It reflects that education based on modern technology allows students to transfer knowledge and skills more efficiently and conveniently (Norbutaevich, 2020). Smart applications are regarded as an adequate solution for promoting student learning sustainability due to their useful and unique characteristics. The use of smart applications for educational purposes is acknowledged as smart educational applications (Al Amri & Almaiah, 2021).

Several factors influence individuals' intentions to use Smart Education. Attitude, subjective norms, teacher efficacy, class resistance, and organisational citizenship behaviour all influence intent to use Smart Education. Furthermore, educational value and teacher efficacy affect attitude; additionally, the burden on class and organisational citizenship behaviour affects teacher efficacy (Kim & Kim, 2013). In South Korea, technological pedagogical content knowledge (TPACK) and school support significantly impact technostress. Furthermore, technostress significantly influences teachers' intentions to use technology. Finally, technostress significantly mediates TPACK, school support, and intention to use technology (Joo, Lim & Kim, 2016). Moreover, performance expectancy,

ISSN:2828-4925
DOI: https://doi.org/10.47841/icorad.v1i2.46
Page:8-22

effort expectancy, social influence, work-life quality, hedonic motivation, internet experience, and facilitating conditions all have a significant impact on and play an important role in state university students' behavioural intention to use and use behaviour of an e-Learning system in Sri Lanka (Samsudeen & Mohamed, 2019).

Research Hypotheses

Massive Open Online Course has gained widespread popularity among universities and plays an important role in the most recent e-learning initiative. Perceived usefulness and satisfaction have significant effects on the continuation intent of students, whereas perceived usefulness has no significant effect on students' satisfaction (Daneji, Ayub & Khambari, 2019). In numerous acceptance studies, perceived usefulness serves as an independent variable within a model (technology acceptance model) or theory (theory of planned behaviour) (Teo, 2011). Student satisfaction, perceived usefulness, and interactive learning environments were all found to be statistically significant predictors of perceived self-regulation in e-learning environments (Liaw & Huang, 2013). Interactive learning and perceived utility significantly impact the perceived satisfaction with e-learning (Amsal et al., 2021). Perceived usefulness has a significant impact on attitudes and intentions regarding computer use. Perceived ease of use significantly influences perceived usefulness, and finally, attitude toward computer use influences behavioural intention (OSMAN, CHOO & Rahmat, 2013). Significant relationships exist between perceived usefulness, perceived ease of use, openness to experience and e-purchase intention. The perceived ease of use has the greatest influence on e-purchase intent. Additionally, perceived usefulness, perceived ease of use, and openness to experience mediate between consciousness and e-purchase intention (Moslehpour et al., 2018). The intention of teachers to use technology was influenced by self-efficacy, perceived ease of use, and perceived utility of technology use. However, Technology pedagogy and content knowledge did not directly affect their intent to use technology. Based on the findings, the TAM model may result in the intention of preservice teachers to use technology (Joo, Park & Lim, 2018). Therefore, the hypotheses could be summarised as follows.

H1: Perceived usefulness significantly influences student satisfaction.

H2: Perceived usefulness significantly influences intention to use Smart Education Technology.

H3: Perceived ease of use significantly influences student satisfaction.

H4: Perceived ease of use significantly influences intention to use Smart Education Technology.

H5: Student satisfaction significantly influences intention to use Smart Education Technology.

H6: Student satisfaction is a significant mediator between perceived usefulness, perceived ease of use, and intention to use Smart Education Technology.

Proceeding of 2nd International Conference on Research and Development (ICORAD 2022)
Indonesia, November 05-06, 2022
ISSN:2828-4925
DOI: https://doi.org/10.47841/icorad.v1i2.46
Page:8-22

Conceptual Framework

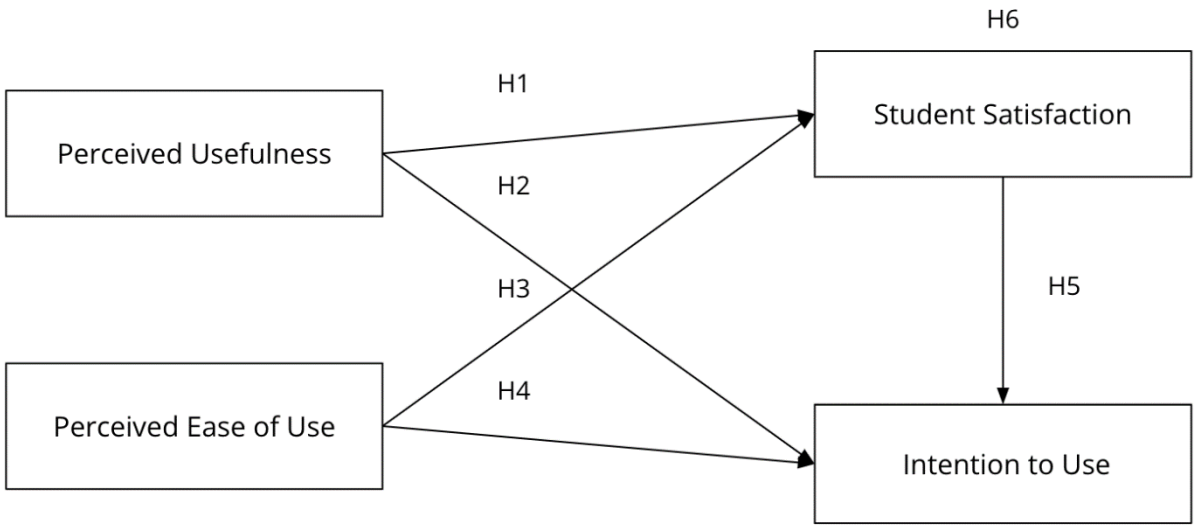

FIGURE 1. Conceptual Framework, Based on Gros (2016) and Limna et al. (2022)

METHODOLOGY

TABLE 1. Characteristics of the Respondents' Demographics (n=238)

Demographic		Frequency	Percentage
Region	Northern	9	3.8%
	Central	67	28.2%
	Eastern	88	37.0%
	North Eastern	27	11.3%
	Southern-Western	47	19.7%
Education	Diploma	22	9.2%
	Bachelor's degree	145	60.9%
	Master's degree	45	18.9%
	Doctoral degree or higher	26	10.9%
Gender	Male	135	56.7%
	Female	103	43.3%
Age	18 - 25 years old	99	41.6%
	26 - 30 years old	28	11.8%
	31 - 35 years old	43	18.1%
	36 - 40 years old	11	4.6%
	41 years old or over	57	23.9%

ISSN:2828-4925
DOI: https://doi.org/10.47841/icorad.v1i2.46
Page:8-22

Status	Single	167	70.2%
	Married	71	29.8%
Monthly Income	< 10,000 THB	45	18.9%
	10,001 - 20,000 THB	66	27.7%
	20,001 - 30,000 THB	10	4.2%
	30,001 - 40,000 THB	52	21.8%
	40,001 - 50,000 THB	16	6.7%
	> 50,000 THB	49	20.6%
	Total	238	100%

Table 1 shows the demographic characteristics of the respondents. The findings revealed that the majority of respondents were male (56.7%), from the Central and Eastern part of Thailand (65.2%), single (70.2%), aged between 18 and 30 years old (53.4%), and had a bachelor's degree (60.9%). In addition, 50.8% of the respondents had a monthly income of less than 30,000 baht. Therefore, the demographic profile represented higher education students' profiles as the sample of this study.

TABLE 2. Item Loadings, Cronbach's Alpha, and Average Variance Extracted (n=238)

Items	Factor Loadings	Mean	SD.
Perceived Usefulness (PU) Cronbach's Alpha = 0.7251, AVE = 0.6440			
During the COVID-19 Pandemic:			
PU1. Using Smart Education Technology enhances my learning motivation.	0.810	4.73	0.444
PU2. Using Smart Education Technology increases my learning proficiency performance.	0.829	4.68	0.589
PU3. Using Smart Education Technology is helpful in my study and daily life.	0.767	4.68	0.535
Perceived Ease of Use (PEU) Cronbach's Alpha = 0.8068, AVE = 0.6364			
During the COVID-19 Pandemic:			
PEU1. Smart Education Technology is easy to use.	0.700	4.81	0.396
PEU2. Smart Education Technology makes it easy for me to become a skillful learner.	0.874	4.64	0.523
PEU3. I would become a proficient learner after using Smart Education Technology.	0.740	4.72	0.476
PEU4. Smart Education Technology is clear and understandable.	0.864	4.61	0.553
Student Satisfaction (SS) Cronbach's Alpha = 0.8395, AVE = 0.6785			
During the COVID-19 Pandemic:			
	0.717	4.74	0.461

ISSN:2828-4925
DOI: https://doi.org/10.47841/icorad.v1i2.46
Page:8-22

SS1. I am satisfied that using Smart Education Technology could improve my learning proficiency.	0.829	4.74	0.440
SS2. Smart Education Technology is better than I expected.	0.913	4.69	0.464
SS3. Using Smart Education Technology is a good decision in learning.	0.824	4.63	0.621
SS4. I enjoy spending more time using Smart Education Technology			
Intention to Use Smart Education Technology (IU) Cronbach's Alpha = 0.8730, AVE = 0.7981			
During the COVID-19 Pandemic:			
IU1. I intend to continue using Smart Education Technology in my learning	0.918	4.72	0.504
IU2. I would use Smart Education Technology to improve my learning.	0.904	4.72	0.596
IU3. I plan to use Smart Education Technology frequently.	0.857	4.56	0.658

Table 2 shows the factor loadings, mean, standard deviation (SD), Cronbach's Alpha, and average variance (AVE). Cronbach's Alpha was set to 0.7 to determine the reliability of the set of primary variables. Following the research of Si Dah et al. (2022), Limsangpetch et al. (2022), and Jaipong et al. (2022), the item loadings were used for the validity test, which was set to 0.7, and the average variance extracted (AVE) was set to 0.5. (2022).

TABLE 3. R-Squared (n=238)

Construct	Coefficient of Determination (R^2)	Adjusted R^2
Student Satisfaction	0.8208	0.8192
Intention to Use	0.8444	0.8424

Table 3 shows the coefficient of determination and adjusted R-square. The coefficient of determination to predict student satisfaction equals 0.8208 or can be explained by predictors of about 82.08%. The coefficient of determination to predict intention to use equals 0.8444 or can be explained by predictors by about 84.44%. The adjusted R^2 to explain perceived usefulness, learning motivation, and student satisfaction equals 0.8192 and 0.8424, respectively.

TABLE 4. Effect Overview (n=238)

Effect	Beta	Indirect Effect	Total Effect	Cohen's f^2
PU → SS	0.4017		0.4017	0.3202
PU → IU	0.0740	0.3133	0.3873	0.0095

ISSN:2828-4925
DOI: https://doi.org/10.47841/icorad.v1i2.46
Page:8-22

PEU → SS	0.5512		0.5512	0.6030
PEU → IU	0.0850	0.4300	0.5149	0.0103
SS → IU	0.7800		0.7800	0.7008

Table 4 shows the effect overview, including effects, Beta, indirect effect, total effect, and Cohen's f^2. The high beta values mean a higher predictive power.

TABLE 5. Total Effects Inference (n=238)

Effect	**Original Coefficient**	**Standard Bootstrap Results**					**Percentile Bootstrap Quantiles**		
		Mean Value	Standard error	t-Value	P-Value (2-tailed)	P-Value (1-Sided)	0.5%	2.5%	97.5%
PU → SS	0.4017	0.4119	0.0658	6.1023	0.0000	0.0000	0.2607	0.2933	0.5534
PU → IU	0.3873	0.4013	0.0779	4.9696	0.0000	0.0000	0.2335	0.2784	0.5820
PEU → SS	0.5512	0.5414	0.0730	7.5561	0.0000	0.0000	0.3212	0.3869	0.6701
PEU → IU	0.5149	0.5067	0.0802	6.4177	0.0000	0.0000	0.2659	0.3277	0.6451
SS → IU	0.7800	0.7738	0.0606	12.8643	0.0000	0.0000	0.6087	0.6438	0.8839

PU = Perceived Usefulness, PEU = Perceived Ease of Use, SS = Student Satisfaction, IU = Intentions to Use

Table 5 shows the total effect influence. The relationship between factors and outcomes is shown in the effects. The greater the original coefficients, the greater the predictive power. The standard bootstrap outcomes include the mean, standard error, T value, p-value (2-tailed), and p-value (1-tailed). The Bootstrap percentile Quartiles consist of 0.5%, 2.5%, and 97.5%, respectively. At p-values, less than 0.05, the 95% significance level is accepted. The significance level of 99% is accepted when the p-value is less than 0.01 and the significance level of 99.9% is accepted when the p-value is less than 0.001.

Proceeding of 2nd International Conference on Research and Development (ICORAD 2022)
Indonesia, November 05-06, 2022
ISSN:2828-4925
DOI: https://doi.org/10.47841/icorad.v1i2.46
Page:8-22

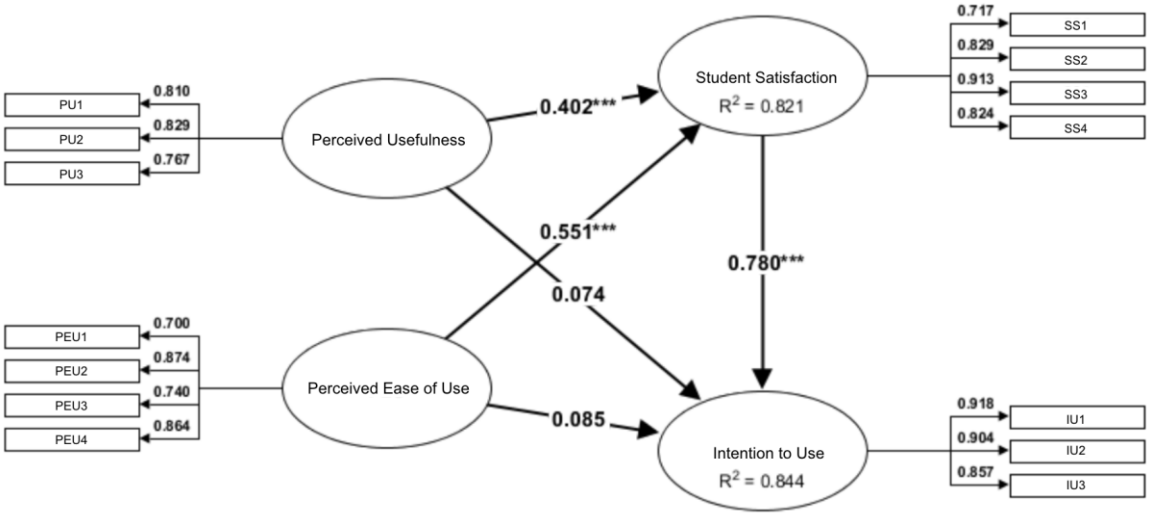

FIGURE 2. Partial Least Square Structural Equation Model

According to figure 2, the PLS-SEM Model of the study is shown as follows. Perceived usefulness can predict student satisfaction at β=0.402, p<0.001 (two tails at 0.0000 and one tail at 0.0000). Perceived ease of use can predict student satisfaction at β=0.551, p<0.001 (two tails at 0.0000 and one tail at 0.0000). Perceived usefulness does not significantly influence intention to use smart education technology at β=0.074, p>0.05. Perceived ease of use does not significantly influence intention to use smart education technology at β=0.085, p>0.05. Student satisfaction can predict intention to use at β=0.780, p<0.001 (two tails at 0.0000 and one tail at 0.0000). Additionally, student satisfaction is a significant mediator between the TAM model (perceived usefulness and perceived ease of use) and intention to use smart education technology at R-square=0.821 (which can be explained by about 82.1%). Finally, the relationship to predict the intention to use smart education technology can be explained by about 84.4% (R-square=0.844).

TABLE 6. Summary of Hypothesis Testing

Hypotheses	Results	Actions
H1: Perceived usefulness significantly influences student satisfaction.	β=0.402, p<0.001	Supported
H2: Perceived usefulness significantly influences the intention to use Smart Education Technology.	β=0.551, p<0.001	Rejected
H3: Perceived ease of use significantly influences student satisfaction.	β=0.074, p>0.05	Supported
H4: Perceived ease of use significantly influences intention to use Smart Education Technology.	β=0.085, p>0.05	Rejected

ISSN:2828-4925
DOI: https://doi.org/10.47841/icorad.v1i2.46
Page:8-22

H5: Student satisfaction significantly influences intention to use Smart Education Technology.	β=0.780, p<0.001	Supported
H6: Student satisfaction is a significant mediator between perceived usefulness, perceived ease of use, and intention to use Smart Education Technology.	R-square=0.821	Supported

The relationship phenomenon can be explained by 84.4% (R^2=0.844).

Table 6 shows the summary of hypothesis testing. Perceived usefulness and perceived ease of use significantly influence student satisfaction. Perceived usefulness and perceived ease of use significantly influence the intention to use smart education technology through the mediating effect of student satisfaction. Therefore, H1, H3, H5, and H6 in this study are supported, but H2 and H4 are rejected. The relationship phenomenon can be explained by 84.4% (R^2=0.844), and the mediating role of student satisfaction can be explained by 82.1% (R^2=0.821),

DISCUSSION

The results confirmed the study of Daneji, Ayub & Khambari (2019) that the Massive Open Online Course has gained widespread popularity among universities and is a crucial component of the most recent e-learning initiative. Students' continuation intentis significantly affected by perceived usefulness and student satisfaction. However, the results of perceived usefulness significantly affect student satisfaction, which is the argument in different results because this study did not support the relationship between perceived usefulness and student satisfaction. The finding supports the study of Teo (2011) that numerous acceptance studies use the perceived usefulness as an independent variable within a model (technology acceptance model) or theory (theory of planned behaviour)(Teo, 2011).

It also supports Liaw & Huang (2013) that student satisfaction, perceived usefulness, and interactive learning environments were statistically significant predictors of perceived self-regulation in e-learning environments by adopting smart technology in education. Moreover, this study confirmed by Amsal et al. (2021) that student satisfaction with e-learning is significantly influenced by interactive learning and perceived usefulness. The finding supports the study of OSMAN, CHOO & Rahmat (2013) that perceived usefulness substantially influences intentions concerning computer use. Perceived ease of use significantly influences perceived usefulness, and attitude toward computer use influences behavioural intention. The results support the study of Moslehpour et al. (2018) and Joo, Park & Lim (2018) that significant associations exist between perceived usefulness, perceived ease of use, and e-purchase intention. Perceived usefulness has the greatest impact on behavioural intention. In addition, perceived usefulness, perceived ease of use, and openness to experience mediate the relationship between awareness and behavioural intention. Perceived ease of use and perceived usefulness of technology use all influenced the intention of teachers to use technology. However, neither Technology pedagogy nor content knowledge influenced their intention to use technology. Based on the findings, the TAM model may result in preservice teachers' intention to use technology.

ISSN:2828-4925
DOI: https://doi.org/10.47841/icorad.v1i2.46
Page:8-22

CONCLUSION

This study could be concluded that perceived usefulness and perceived ease of use significantly influence student satisfaction with smart education technology during the COVID-19 pandemic among higher education students in Thailand. Perceived usefulness and perceived ease of use significantly influence the intention to use smart education technology through the mediating effect of student satisfaction. The relationship phenomenon can be explained by high predictive power. Educators and teachers could improve the perceived usefulness of using smart education technology by enhancing students' learning motivation. Students perceive smart education technology that is easy to use. The students are satisfied with using Smart Education Technology because it could improve their learning proficiency. Finally, Thai students intend to use Smart Education Technology because Smart Education Technology improves students in learning. However, the TAM model could be applied to enhance the intention to use smart technology in any sector during the COVID-19 pandemic.

LIMITATIONS AND RECOMMENDATIONS

This study investigated the relationship between perceived usefulness and perceived ease of use of the TAM, student satisfaction, and intention to use Smart Education Technology among higher education students in Thailand. The recommendation is for the researchers to conduct additional sampling in additional countries. The findings may provide a general explanation. Moreover, the nature of this study is a self-administered questionnaire. Thus, qualitative studies, such as interviews or focus group discussions, could give insight into results for further study.

REFERENCES

Akter, S., Fosso Wamba, S., & Dewan, S. (2017). Why PLS-SEM is suitable for complex modelling? An empirical illustration in big data analytics quality. Production Planning & Control, 28(11-12), 1011-1021.

Al Amri, M., & Almaiah, M. A. (2021). Sustainability Model for Predicting Smart Education Technology Adoption Based on Student Perspectives. *International Journal of Advances in Soft Computing & Its Applications*, *13*(2), 60-77.

Almaiah, M. A., Ayouni, S., Hajjej, F., Lutfi, A., Almomani, O., & Awad, A. B. (2022). Smart Mobile Learning Success Model for Higher Educational Institutions in the Context of the COVID-19 Pandemic. *Electronics*, *11*(8), 1278.

Al-Maroof, R. S., Salloum, S. A., Hassanien, A. E., & Shaalan, K. (2020). Fear from COVID-19 and technology adoption: the impact of Google Meet during Coronavirus pandemic. *Interactive Learning Environments*, 1-16.

Amsal, A. A., Putri, S. L., Rahadi, F., & Fitri, M. E. Y. (2021, February). Perceived Satisfaction and Perceived Usefulness of E-Learning: The Role of Interactive Learning and Social Influence. In *The 3rd International Conference on Educational Development and Quality Assurance (ICED-QA 2020)* (pp. 535-541). Atlantis Press.

Bootsumran, L., Siripipatthanakul, S., & Phayaphrom, B. (2021). Factors Influencing Consumers' Purchase Intention at Pharmacies in Thailand. *Journal of Management in Business, Healthcare and Education*, *1*(1), 1-16.

Daneji, A. A., Ayub, A. F. M., & Khambari, M. N. M. (2019). The effects of perceived usefulness, confirmation and satisfaction on continuance intention in using massive open online course (MOOC). *Knowledge Management & E-Learning*, *11*(2), 201-214.

ISSN:2828-4925
DOI: https://doi.org/10.47841/icorad.v1i2.46
Page:8-22

Gros, B. (2016). The Design of Smart Educational Environments. *Smart Learning Environments*, *3*(1), 1-11. DOI: doi.org/10.1186/s40561-016-0039-x.

Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. European business review.

Haleem, U., Asim, M., & Manzoor, S. (2021). Impact of Online Education's Compatibility on Student's Satisfaction in Universities of Pakistan by Using TAM Model. *Pakistan Journal of Educational Research*, *4*(2), 72-86. DOI: doi.org/10.52337/pjer.v4i2.133.

Jaipong, P., Siripipatthanakul, S., Sitthipon, T., Kaewpuang, P., & Sriboonruang, P. (2022). An Association Between Brand Trust, Brand Affection and Brand Loyalty: The Case of a Coffee Brand in Bangkok Thailand. *Advance Knowledge for Executives*, *1*(1), 1-14.

Jandawapee, S., Siripipatthanakul, S., Phayaphrom, B., & Limna, P. (2022). Factors Influencing Intention to Follow the Preventive COVID-19 Protocols Among Thai People. *International Journal of Behavioral Analytics*, *2*(1), 1-15.

Joo, Y. J., Lim, K. Y., & Kim, N. H. (2016). The Effects of Secondary Teachers' Technostress on the Intention to Use Technology in South Korea. *Computers & Education*, *95*, 114-122.

Joo, Y. J., Park, S., & Lim, E. (2018). Factors influencing preservice teachers' intention to use technology: TPACK, teacher self-efficacy, and technology acceptance model. *Journal of Educational Technology & Society*, *21*(3), 48-59.

Kaewnaknaew, C., Siripipatthanakul, S., Phayaphrom, B., & Limna, P. (2022). Modelling of Talent Management on Construction Companies' Performance: A Model of Business Analytics in Bangkok. *International Journal of Behavioral Analytics*, *2*(1).

Kim, S. Y., & Kim, M. R. (2013). Comparison of Perception toward the Adoption and Intention to Use Smart Education between Elementary and Secondary School Teachers. *Turkish Online Journal of Educational Technology-TOJET*, *12*(2), 63-76.

Liaw, S. S., & Huang, H. M. (2013). Perceived Satisfaction, Perceived Usefulness and Interactive Learning Environments as Predictors to Self-Regulation in e-Learning Environments. *Computers & Education*, *60*(1), 14-24.

Limna, P., Siripipatthanakul, S., & Siripipattanakul, S. (2021). A Conceptual Review on the Mediating Role of Student Satisfaction Between Twenty-First Century Learning Style and Student Performance-Effectiveness. J*ournal of Management in Business, Healthcare, and Education, 1*(1), 1-16. Available at SSRN: 3992227.

Limna, P., Siripipatthanakul, S., Siripipattanakul, S., Woodeson, K., & Auttawechasakoon, P. (2022). Applying the UTAUT to Explain Factors Affecting English Learning Intention Via Netflix (English Subtitle) Among Thai people. *Asia-Pacific Review of Research in Education, 1*(1), 1-19. Available at SSRN: 4046242.

Limsangpetch, V., Siripipatthanakul, S., Phayaphrom, B., & Limna, P. (2022). Modelling Knowledge Management on Business Performance Through Mediating Role of Organisational Innovation Among IT Staff in Bangkok, Thailand. *International Journal of Behavioral Analytics*, *2*(2), 1-17. Available at SSRN: 4036591.

Luan, W. S., & Teo, T. (2009). Investigating the technology acceptance among student teachers in Malaysia: An application of the technology acceptance model (TAM). *Asia-Pacific Education Researcher*, *18*(2), 261-272.

Mailizar, M., Burg, D., & Maulina, S. (2021). Examining university students' behavioural intention to use e-learning during the COVID-19 pandemic: An extended TAM model. *Education and Information Technologies*, *26*(6), 7057-7077.

ISSN:2828-4925
DOI: https://doi.org/10.47841/icorad.v1i2.46
Page:8-22

Marks, R. B., Sibley, S. D., & Arbaugh, J. B. (2005). A Structural Equation Model of Predictors for Effective Online Learning. *Journal of Management Education*, *29*(4), 531-563.

Moslehpour, M., Pham, V. K., Wong, W. K., & Bilgiçli, İ. (2018). E-purchase Intention of Taiwanese Consumers: Sustainable Mediation of Perceived Usefulness and Perceived Ease of Use. *Sustainability*, *10*(1), 234.

Napawut, W., Siripipatthanakul, S., Phayaphrom, B., Siripipattanakul, S., & Limna, P. (2022). The Mediating Effect of E-WOM on the Relationship Between Digital Marketing Activities and Intention to Buy Via Shopee. *International Journal of Behavioral Analytics*, *2*(2), 1-13.

Norbutaevich, J. T. (2020). Use of Digital Learning Technologies in Education on the Example of Smart Education. *Journal La Edusci*, *1*(3), 33-37.

Oliveira, G., Grenha Teixeira, J., Torres, A., & Morais, C. (2021). An Exploratory Study on the Emergency Remote Education Experience of Higher Education Students and Teachers during the COVID-19 Pandemic. *British Journal of Educational Technology*, *52*(4), 1357-1376.

OSMAN, R. B., CHOO, P. S., & Rahmat, M. K. (2013). Understanding student teachers' behavioural intention to use technology: Technology Acceptance Model (TAM) validation and testing. *International Journal of Instruction*, *6*(1).

Phetnoi, N., Siripipatthanakul, S., & Phayaphrom, B. (2021). Factors Affecting Purchase Intention Via Online Shopping Sites and Apps During COVID-19 in Thailand. *Journal of Management in Business, Healthcare and Education*, *1*(1), 1-17.

Safsouf, Y., Mansouri, K., & Poirier, F. (2020, March). Smart learning environment, measure online student satisfaction: A case study in the context of higher education in Morocco. In *2020 International Conference on Electrical and Information Technologies (ICEIT)* (pp. 1-5). IEEE.

Samsudeen, S. N., & Mohamed, R. (2019). University Students' Intention to Use e-Learning Systems: A Study of Higher Educational Institutions in Sri Lanka. *Interactive Technology and Smart Education, 16*(3), 219-238. DOI: doi.org/10.1108/ITSE-11-2018-0092.

Si Dah, N., Siripipatthanakul, S., Phayaphrom, B., & Limna, P. (2022). Determinants of Employee Innovation: A Case of NGOs and CSOs in Mae Sot, Thai-Myanmar Border. *International Journal of Behavioral Analytics*, *2*(1), 1-15.

Siripipattanakul, S., Siripipatthanakul, S., Limna, P., & Auttawechasakoon, P. (2022). The Relationship Between Website Quality, University Image, e-WOM and Intention to Follow the University Website. *Psychology and Education Journal*, *59*(2), 529-544.

Sitthipon, T., Limna, P., Jaipong, P., Siripipattanakul, S., & Auttawechasakoon, P. (2022). Gamification Predicting Customers' Repurchase Intention Via E-Commerce Platforms Through Mediating Effect of Customer Satisfaction in Thailand. *Review of Advanced Multidisciplinary Sciences, Engineering & Innovation*, *1*(1), 1-14.

Taherdoost, H. (2016). Sampling Methods in Research Methodology; How to Choose a Sampling Technique for Research. *International Journal of Academic Research in Management,* 5, 18-27. DOI: dx.doi.org/10.2139/ssrn.3205035,

Tick, A. (2019). An extended TAM model, for evaluating eLearning acceptance, digital learning and smart tool usage. *Acta Polytechnica Hungarica*, *16*(9), 213-233.

Teo, T. (2011). Modeling the determinants of pre-service teachers' perceived usefulness of e-learning. *Campus-Wide Information Systems*.

ISSN:2828-4925
DOI: https://doi.org/10.47841/icorad.v1i2.46
Page:8-22

Wen, K. Y. K., & Kim Hua, T. (2020). ESL Teachers' Intention in Adopting Online Educational Technologies during COVID-19 Pandemic. *Journal of Education and E-learning Research*, *7*(4), 387-394.

Wong, K. T., Osman, R. B., Goh, P. S. C., & Rahmat, M. K. (2013). Understanding Student Teachers' Behavioural Intention to Use Technology: Technology Acceptance Model (TAM) Validation and Testing. *International Journal of Instruction, 6*(1), 89-104.

Zhu, Z. T., Yu, M. H., & Riezebos, P. (2016). A Research Framework of Smart Education. *Smart Learning Environments*, *3*(1), 1-17.