EXAMINING UNIVERSITY STUDENTS' BEHAVIOURAL INTENTION TO DISTANCE LEARNING DURING COVID-19: AN EXTENDED TAM MODEL

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ABSTRACT

Learning was obliged to be transformed to distance learning due to the long-lasting COVID-19 lockdown period. This situation has brought to investigate the critical factors influencing students' intention and actual use of distance learning tools. In this context, this study aims to evaluate the effects of distance learning, deriving independent variables adopted from ETAM. Data was gathered from 92 undergraduate students enrolled in five and other courses in Turkiye. Data were investigated via SmartPLS 3.0 through Structural Equation Modelling (SEM). Results indicate that Computer Anxiety had a negative impact on Self-efficacy. Self-efficacy had a positive influence on Experience. Experience and Enjoyment had positive effects on Perceived Ease of Use. Enjoyment had a positive influence on Perceived Usefulness. The proposed model explained 87.7% of the variance of the actual use of distance learning tools. Computer anxiety and self-efficacy, which were proposed to measure experience, made this study unique and valuable. This contributes to acknowledging higher education institutions and lecturers to understand the benefits and barriers of distance learning tools for students used during the unpredicted pandemics in the future.

Keywords: Distance learning, Structural Equation Modelling, Extended Technology Acceptance Model, COVID-19.

INTRODUCTION

Education has changed dramatically with the rise of the COVID-19 pandemic from January 2020 to June 2021 in the world. As the rapid shift occurred to distance learning, 85% of countries closed their schools partially or entirely (The World Bank, 2020). Distance learning has also become essential all around the world and is also inevitable for countries to pursue education. However, the interruption of distance education occurred because of inadequate internet bandwidth declared by El-Said (2021) and the lack of online education tools use presented by Rahmadi (2020). With the growth of the pandemic by Delta variant, It is probably seen that COVID-19 epidemics have not finished yet soon, so these issues are needed to be addressed for higher education institutions to understand what effects determine the university students to accept or reject online education tools.

The COVID-19 pandemic has changed the schools' academic plans and the way how they operate their classes. It is different for distinct countries according to the technological infrastructure (The World Bank, 2020). In Turkiye, Education Information Network (EBA) was developed to provide an education digital platform for 18 million students within 18 channels for primary schools, elementary schools, and high schools with 6- 8 GBs extra data packages allowance by the ministry of national education (MoNE). In Macedonia, the Eduino platform was created to continue primary school education by the ministry of education, a UK government-funded program, and the UNICEF collaboration. In South Korea, the government increased 4 % of the total education budget to build Wedorang and e-Hakseupteo cyberlearning services that were established to arrange education plans via three distinctTelcoms (SKT, KT, and LGU+) for

students to contain healthy education by The Ministry of Science and ICT (MSIT). In Japan, the ministry of education, culture, sports, science, and technology built a centralized website for online class delivery and video conferences for all schools. In Indonesia, Google Suite Education, Smart Class, Microsoft Teams, Quipper School, Sekolahmu, and Kelas Pi are the five technology companies that provide online learning study programs via TV Edukasi. In India, The DIKSHA portal was developed to contain e-learning tools with 12 languages for students by the Ministry of Human Resource Development (HRD). In Jamaica, One on One Educational Services, Cheetah, Book Fusion, Edufocal, the Learning Hub, and CSEC COVID-19 Toolkit was used as an online learning platform with 25 cable channels by the ministry. In Croatia, Loomen, Microsoft Teams, and Yammer platforms were conducted to operate the classes with 15 minutes per class by containing free internet for the lower status children by the ministry of education. In Czechia, the Ministry of Education, Youth, and Sport (MEYS) categorized education into three separate programs: opened a live daily program, UčiTelka in the mornings, educational TV programs in the afternoons, and inspirational programs for the exam preparations.

Moving to online teaching for higher education varies from country to country. Some countries such as the US, Brazil, Chile, India, Indonesia, Jordan, and South Africa had a half distance learning via virtual learning platforms, whereas Australia, Germany, Italy, the Republic of Ireland, the United Kingdom, China, Egypt, Hong Kong, Brazil, and Singapore had a full distance learning. In those countries, all campus closures were practiced except in some states in the USA, some cities in Brazil, and some cities in Singapore (Crawford et al., 2020).

Turkiye has had closures and a limited country-wide policy. As a policy, the Council of Higher Education planned to move the semester dates extending or starting early for higher education, coming to an agreement with GSM operators for free GB use (Crawford et al., 2020). Educational Informatics Network (EIN) Infrastructure was invested by the Ministry of National Education MoNE) to strengthen the high-volume access of students and teachers, which set precedents for higher education institutions to build their distance learning tools. Even the government support was gathered, most universities were indecisive about how to deal with e-learning infrastructure. Higher education institutions were also obliged to upgrade internet bandwidth and data center capacities and purchased licensed online education platforms (El Said, 2021).

Universities in Turkiye did not transform swiftly to online teaching. Each university in Turkiye has a separate policy for higher education as synchronous in terms of web meeting tools, and asynchronous in terms of discussion boards and other tools. Virtual learning environments such as Microsoft Teams, and Zoom has intensively had used in Turkish higher education. Some universities, which invested in distance learning, used Moodle, Adobe Connect, ALMS, and Blackboard (Kacan& Gelen, 2020). With these portals for each university in Turkiye, the process of distance learning adoption for higher education has brought the technical challenges such as access failure mentioned by Kazakova & Murzich (2020), high cost of technology stated by Cacault et al. (2019), and high user charge by Santos et al. (2021). These also increase the requirements for acquiring knowledge for the online distance learning platforms (Barreto et al., 2020). In this context, the research question of the study was how university students were affected by the use of distance learning platforms. In this context, the study aims to examine the attitude of higher education students in Turkiye toward distance learning tools and understand to what extent the acceptance of IT communication tool technologies was obtained by applying the ETAM model.

In order to come up with an understanding of the behavioral intention to use distance learning platform, the ETAM addressed key challenges of distance learning adoption such as Perceived Usefulness (PU), Perceived Ease of Use (PEOU), Attitude Towards Using (ATU), Intention to Use (ITU), Actual Use (AU), Experience (XP), Enjoyment (ENJ), Computer Anxiety (CA), and Self-Efficacy (SE). The originality of the study is that there are no studies regarding the understanding of the acceptance of distance learning tools in Turkiye, as well as incorporating a technological acceptance model in terms of measuring the correlation of computer anxiety with self-efficacy, and self-efficacy with experience.

Theoretical Framework

There are several adoption theories widely used for assessing factors of actual use of technologies: Theory of Reasoned Action (TRA) Fishbein & Ajzen (1975), Technology acceptance theory (TAM) (Davis, 1989), Extended Technology acceptance model (ETAM) Venkatesh & Davis (2000), and Unified Theory of Acceptance and Use of Technology (UTAUT) Venkatesh et al (2003). In this study, ETAM theory models were applied for measuring the actual uses of distance learning tools, because factors were added to TAM to include external factors such as Experience (XP), Enjoyment (ENJ), Computer Anxiety (CA), and Self-Efficacy (SE) for understanding behavior intention through Perceived Ease of Use (PEOU) and Perceived Usefulness (PU).

Computer Anxiety (CA) was defined as the concern or potential benefit from a computer (Chua et al., 1999). It is suggested that the students, who have less computer anxiety, tend to be self-efficacy using distance learning tools. Self-Efficacy (SE) was described as the dimension of the belief people can succeed in doing a task by computer (Compeau, 1995). It is claimed that the students, who have higher perceived self-efficacy, were more likely to be experienced to use distance learning tools. Experience (XP) was described as humans' knowledge of technology acceptance (Venkatesh & Bala, 2008). It was reported that the students, who have much experience, tend to have used distance learning tools easily. Enjoyment (ENJ) was defined as the activities' joy level (Venkatesh, 2000). It is shown that the students, who have a high perceived enjoyment, are more likely to have ease of use distance learning use, and system usefulness. Perceived Ease of Use (PEOU) was defined as a degree to which students think that the system users will be complex (Davis, 1989). It is exhibited that the students, who have used distance learning tools easily, tend to have perceived system usefulness. Perceived Usefulness (PU) was defined as which students think that distance learning technology would enhance the student's study performance (Davis et al., 1989). It is believed that the students, who have high perceived usefulness, are likely to affect users' attitudes toward using the technology, their intention to use it, and their actual use of it positively.

To investigate the effects of the proposed model on the actual use of technology acceptance, the following hypotheses were developed.

H1. Computer Anxiety (CA) have a negative impact on *Self Efficacy (SE).*

H2. Self-Efficacy (SE) has a positive impact on *Experience (XP).*

H3. Experience (XP) has a positive impact on *Perceived Ease of Use (PEOU).*

H4. Enjoyment (ENJ) has a positive impact on *Perceived Ease of Use (PEOU).*

H5. Enjoyment (ENJ) has a positive impact on *Perceived Usefulness (PU).*

H6. Perceived Ease of Use (PEOU) has a positive impact on *Perceived Usefulness (PU).*

H7. Perceived Usefulness (PU) has a positive impact on Attitudes *Towards Using (ATU).*

H8. Attitudes Towards Using (ATU) has a positive impact on *Intention To Use (ITU).*

H9. Intention To Use (ITU) has a positive impact on *Actual Use (AU)*

MATERIALS AND METHODS

The quantitative research design was applied to 92 university students, containing five-course and the others: Graphical Design, Applied English and Translation, Occupational Health and Safety, Civil Aviation Transportation Management, and Medical Documentation and Secretariat. The data were collected as an online survey from the fall term in 2020 to the end of the spring term in 2021 and sent to those who participated in Introduction to Computer and Information Technology, Computer-Aided Office Programs I, and Object-Oriented Programming lectures. A total of 32 questions were asked via Google Forms. Four of them were for descriptive analysis. 28 of them were executed to test structural equation modeling. The question sample size, which should be from 3 to 20 times the variables' number confirmed by Daniel et al. (2005), was fit as the minimum was (28x3) 84 which was needed. Confirmatory factor analysis was applied to test the hypothesis.

RESULTS

Students in Demographic Participants of Survey as descriptive were illustrated in Table 1 below. Gender, course studying, age, and distance learning platform use sections were presented. According to the survey, 59.8% of the sample were female. The rest of them were male with 40.2%. The course with the most participants was Civil Aviation Transportation Management with 29.3%. The second most was Applied English and Translation with 19.6%. The third course was Graphical Design by 18.5%. The fourth and the fifth were Medical Documentation and Secreteriat, and Occupational Health, and Safety by 19.6%, and 12%, respectively. The last and the least course was Management Information Systems by 1.2%. Most participants, aged 20-21, attended 44.6%. The second participants, aged 18-19, were 37.0%. The rest of them were aged 22-23, aged 24-25, aged 26-29, and above 30 by 8.7%, 4.3%, 4.3%, and 1.1%, respectively. The platforms of distance learning were distinct: Blackboard Ultra by 93.5%, Zoom by 5.4%, and Sakai by 1.1%.

Table 1. Demographic participants of the survey

(1) Gender N (%)		Total (Ratio)
	Female	55(59.8)
	Male	37(40.2)
(2) Course Studying N (%)		
	Graphical Design	17 (18.5)
	Applied English and Translation	18 (19.6)
	Occupational Health and Safety	11 (12)
	Civil Aviation Transportation Management	27 (29.3)
	Medical Documentation and Secreteriat	16 (17.4)
	Others	3(1.2)
(3) Age N (%)		
	18-19	34(37.0)
	20-21	41(44.6)
	22-23	8(8.7)
	24-25	4 (4.3)
	26-29	4(4.3)
	Above 30	1 (1.1)
(4) Distance Learning Platform		
	Blackboard Ultra	86 (93.5)
	Sakai	1 (1.1)
	Zoom	5 (5.4)

An ETAM consists of nine constructs: CA, SE, XP, ENJ, PU, PEOU, ATU, ITU, and AU. The structural model's SRMR value was 0.096, which MacCallum et al. (1996) pointed out that, the SRMR value, which had between 0.08 and 0.10, was a considerable fit. All factor loadings were accepted, which should be above 0.7, declared by Hair et al. (2017). All AVE values were valid, which should be above 0.5, as stated by Hair et al. (2010). All CR values were fit, and the threshold of value was 0.7, clarified by Hair et al. (2010). According to Table 2, CA has 4 items, including factor loadings between 0.852 and 0.921, CR was 0.792, and AVE was 0.781. SE has 3 items, containing factor loadings between 0.841 and 0.902, CR that was 0.897, and AVE that was 0.745. XP has 4 items, involving factor loadings between 0.708 and 0.773, CR that was 0.831, and AVE that was 0.552. ENJ has 3 items, holding factor loadings between 0.942 and 0.965,

CR that was 0.967, and AVE that was 0.908. PU has 4 items, containing factor loadings between 0.889 and 0.950, CR that was 0.956, and AVE that was 0.845. PEOU has 4 items, including factor loadings between 0.690 and 0.884, CR that was 0.891, and AVE that was 0.674. ATU has 2 items, involving factor loadings between 0.939 and 0.946, CR that was 0.941, and AVE that was 0.889. ITU has 3 items, containing factor loadings between 0.751 and 0.928, CR that was 0.960, and AVE that was 0.888. AU has 1 item, involving factor loadings is 1, CR that was 1, and AVE that was 1.

Table 2. Items, Factor Loadings, Composite Reliability (CR), Average Variance Extracted (AVE) of ETAM Constructs, and Standardized Root Mean Square Residual Value (SRMR) of the structural model

TAM constructs	Items	Factor Loadings	CR	AVE
CA	CA1	0.855	0.792	0.781
	CA2	0.852		
	CA3	0.921		
	CA4	0.906		
SE	SE1	0.844	0.897	0.745
	SE2	0.841		
	SE3	0.902		
XP	XP1	0.773	0.831	0.552
	XP2	0.764		
	XP3	0.708		
	XP4	0.723		
ENJ	ENJ1	0.965	0.967	0.908
	ENJ2	0.951		
	ENJ3	0.942		
PU	PU1	0.938	0.956	0.845
	PU2	0.898		
	PU3	0.950		
	PU4	0.889		
PEOU	PEOU1	0.690	0.891	0.674
	PEOU2	0.844		
	PEOU3	0.852		
	PEOU4	0.884		
ATU	ATU1	0.939	0.941	0.889
	ATU2	0.946		
ITU	ITU1	0.776	0.960	0.888
	ITU2	0.751		
	ITU3	0.928		
AU	AU1	1	1	1
Structural model fit				
SRMR (0.096)				

Three levels of correlation were classified as strong (above 0.7), moderate (0.3-0.7), and low (below 0.3) (Hair et al. 2017). Above all constructs' relationships in Table 3, the three highest correlations for the per stage were firstly strong. There is a strong correlation between Intention to Use (ITU) and Actual Use (AU) with a value of 0.93, Attitudes towards Using (ATU) and Actual Use (AU) with a value of 0.828, Enjoyment (ENJ), and Intention to Use (ITU) with a value of 0.824. Secondly, medium correlations were presented. There was a moderate correlation between Perceived Ease of Use (PEOU) and Perceived Usefulness (PU) with a value of 0.671, Enjoyment (ENJ) and Perceived Ease of Use (PEOU) with a value of 0.655, Experience (XP) and Perceived Ease of Use (PEOU) with a value of 0.645. Thirdly, low correlations were displayed. There is a low correlation between Computer Anxiety (CA) and Attitudes toward Using (ATU) with a value of -0.275, Computer Anxiety (CA) and Perceived Usefulness (PU) with a value of -0.256, Computer Anxiety (CA) and Intention to Use (ITU) with a value of -0.185.

Table 3. Correlation Matrices of Constructs

Constructs	CA	SE	XP	ENJ	PU	PEOU	ATU	ITU	AU
CA	1								
SE	-0.468	1							
XP	-0.619	0.558	1						
ENJ	-0.405	0.467	0.595	1					
PU	-0.256	0.380	0.516	0.748	1				
PEOU	-0.474	0.556	0.645	0.655	0.671	1			
ATU	-0.275	0.463	0.490	0.066	0.800	0.634	1		
ITU	-0.185	0.400	0.457	0.824	0.763	0.505	0.828	1	
AU	-0.145	0.353	0.427	0.799	0.773	0.510	0.817	0.937	1

The study exhibited that CA negatively affects SE with a strong effect size (β = -.468, p = .000), with a T value of 3.949, thus supporting H1. SE positively affects XP with a strong effect size (β =.558, p=.000), with a T value of 6.906 thus supporting H2. The study showed that XP and ENJ positively affect PEOU with a strong effect size (β = .396, p = .000) and (β = .419, p = .000), with the T value of 3.447 and 3.592 respectively, thus supporting H3, and H4. The study indicated that ENJ positively affects PU with a strong effect size (β = .540, p = .000), with the T value of 6.510 respectively, supporting H5. PEOU positively influences PU with a strong effect size (β =.318, p=.000), with a T value of 3.650 thus supporting H6. PU positively affects ATU with a strong effect size (β = .540, p = .000), with the T value of 25.691, therefore supporting H7. ATU positively affects ITU with a strong effect size (β = .829, p = .000), with the T value of 21.928, thus supporting H8. ITU positively affects AU with a strong effect size (β = .937, p = .000), with the T value of 75.421, thus supporting H9.

The results indicated that the variance of CA explained 21.9% of the variance of SE. The variance of SE explained 31.1% of XP. The variance of XP, and ENJ explained 53.0% of PEOU. The variance of ENJ and PU explained 61.7% of PU. The variance of PU explained 67.9% of ATU. The variance of ATU explained 68.5% of ITU. The variance of ITU explained 87.7% of the structural model, as illustrated in Figure 1.

Table 4. Hypothesis Testing of the Structural Model

Structural Model	Path Coefficients	T Values	Results	p-value
CA-> SE **(H1)**	- 0.468	3.949	**SUPPORTED**	0.000 (***)
SE Explained as %: (21.9)				
SE->XP **(H2)**	0.558	6.906	**SUPPORTED**	0.000 (***)
XP Explained as %: (31.1)				
XP->PEOU **(H3)**	0.396	3.447	**SUPPORTED**	0.000 (***)
ENJ->PEOU **(H4)**	0.419	3.592	**SUPPORTED**	0.000 (***)
PEOU Explained as %: (53.0)				
ENJ->PU **(H5)**	0.540	6.510	**SUPPORTED**	0.000 (***)
PEOU->PU **(H6)**	0.318	3.650	**SUPPORTED**	0.000 (***)
PU Explained as %: (61.7)				
PU->ATU **(H7)**	0.829	25.691	**SUPPORTED**	0.000 (***)
ATU Explained as %: (67.9)				
ATU->ITU **(H8)**	0.828	21.928	**SUPPORTED**	0.000 (***)
ITU Explained as %: (68.5)				
ITU->AU **(H9)**	0.937	75.421	**SUPPORTED**	0.000 (***)
Structural Model: AU Explained as %: (87.7)				

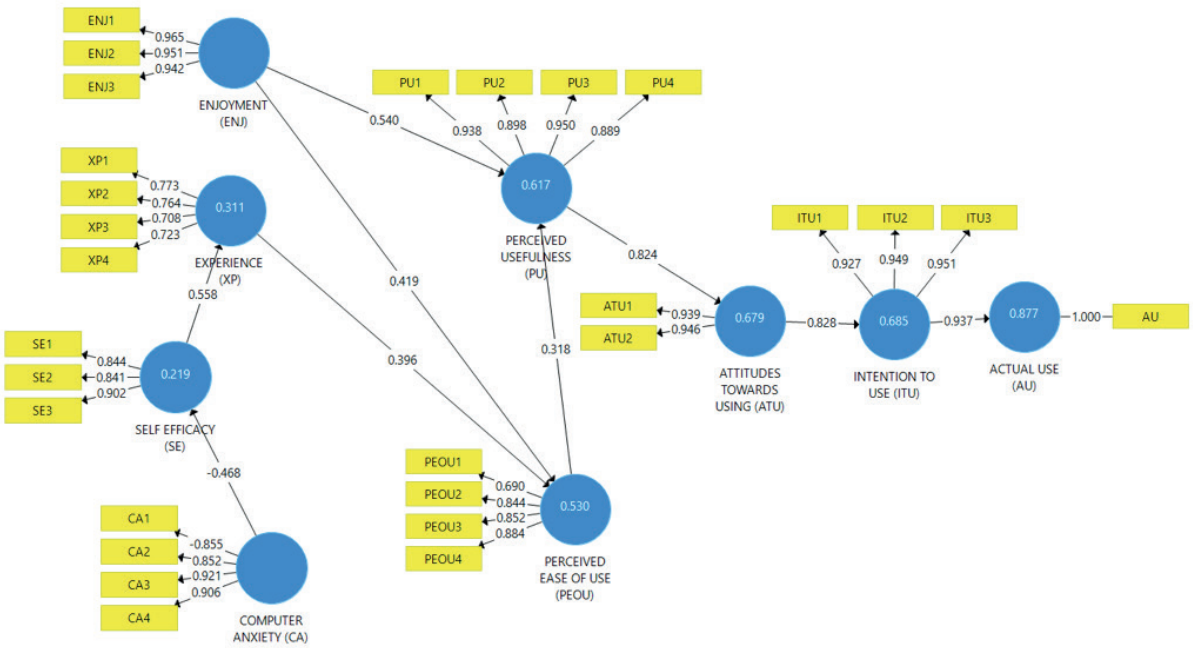

Figure 1. Structural model of ETAM model

DISCUSSION

In Turkiye, education has changed unexpectedly after the COVID-19 breakout in March 2020. Thus, distance learning adoption was needed abruptly from scratch to today. Lecturers, students, and higher education steering committees were especially caught unprepared, so universities built education system policies, containing synchronous, and asynchronous education tools. These tools were aimed to form the lectures as interactive for students to build two-way communication. For student information systems in Turkiye, most universities have used commercial software systems such as Moodle 47.8% and Adobe Connect 26.7% (Kacan & Gelen, 2020). In the world, that kind of system was just used to share files, enter or see grades, finding internships, and career development meetings (Ozbay, 2015). Anadolu Open University, a pioneering online higher education institution, has conducted several courses via AKADEMA for 34 years. Most universities in Turkiye also had a remote education for the intensive and crowded courses such as History 101, and Turkish Language before COVID-19. Thus, distance learning is not a new phenomenon in Turkish higher education.

Now, this sudden change along with the COVID-19 pandemic has brought developments in the Turkish higher education system. Some universities such as Bahcesehir University found this opportunity as an experience and therefore, transformed some courses to online teaching from now on (BAU, 2021). Some universities also found it as an entrepreneur skill, which they build their learning tools by 15.7%, ALU created by Ataturk University, SOFRA developed by Bilecik Seyh Edebali University, DE-OYS found by Dokuz Eylul University (Kacan & Gelen, 2020). Kacan & Gelen (2020) also declared that some universities, which invested in open-source software systems such as Zoom and Microsoft Teams were widely used that was by 37.0%. Thus, this technology is worth measuring the students' acceptance or rejects the actual use of distance learning.

Later, from March 2020 till today, understanding the actual use of distance learning adoption has become crucial. It can be inferred that attitude towards using (ATU) distance learning was not correlated with perceived ease of use (PEOU) but was correlated with perceived usefulness (PU), as this learning transformation to online during the COVID-19 outbreak has a priority for higher educations in Turkiye. In other words, implementing the system was more important than using the system usability at the first phase.

From the structural model, from a computer anxiety- self-efficacy hypothesis (H1), the privilege was given by the higher education. For example, even add-drop time for lectures has been extended by the universities, applying to it was so few, which showed that university students have had self courage that decreases computer anxiety. Some distance learning tools also provide support for students. For example, the Sakai tool had a real-time 7-24 two-way messaging opportunity, and Blackboard Ultra also had online webinars and conferences for obtaining system usability feedback. This two-way communication has brought students to increase their self-courage. Achim& Kassim (2014) also agreed that computer anxiety negatively affected the self-efficacy of employees' computer usage in Malaysia.

From a self-efficacy-experience hypothesis (H2), the learning center of universities has given training for students to acquire computer skills that have brought experience over using distance learning tools. Lecturers also got informed by the students concerned with students' class issues such as incomprehensive points of classes, pre-exam materials, lack of equipment Ferran (2021) monitored the effects of self-efficacy on the acceptance of distance learning adoption in the Philippines, but disregarded the influence the self-efficacy on experience, which this study tested and accepted it.

From an experience- perceived ease of use hypothesis (H3), Anadolu University (2021) stated that 29% of students have been attending open Universities in Turkiye so some university students had previously experienced using distance learning. Nearly 99% of universities put History and Turkish as online courses. These show that students tend to use distance learning tools easily just before the COVID-19 outbreak. In addition, Park & Park (2020) approved that experience affected positively perceived ease of use and perceived usefulness for construction IT in South Korea.

From an enjoyment- perceived ease of use hypothesis (H4), current Turkish students during COVID-19, who were born between 2000 and 2003, had already used technological equipment to play games, watch educational videos during their childhood, documents, and presentation software to do their homework, and followed the classes on the smart boards during their adolescence so their prior experiences have brought enjoyment in the process, they even used to use asynchronous tools such as web seminars, web lectures, web laboratory exercises, web field trips, and web term papers. The sessions also have been recorded on the universities' servers. Thus, these servers enable students to be able to access the classes over and over again which brings learning more dynamic and interesting. From an enjoyment- perceived usefulness hypothesis (H5), students, who found joy, and happiness during online classes, can learn how to use distance learning tools easily, and help the system to be improved by finding barriers over using them. Salloum (2018) found that enjoyment affected positively perceived ease of use and perceived usefulness for distance learning in the United Arab Emirates, whereas Rahmi et al. (2021) disagreed that enjoyment did not have an effect in Turkiye.

From the perceived ease of use- perceived usefulness hypothesis (H6), it can be deduced that the easier students use distance learning tools, the more useful they will be for students. From perceived usefulness - attitudes towards using hypothesis (H7), attitudes towards using- intention to use hypothesis (H8), and intention to use – actual use (H9) it can be inferred that system's acceptance has changed the attitude towards using, later intending to use it, finally actual use of distance learning tools.

This study aims to monitor the behavioral intention to distance learning during COVID-19 to develop the standards of higher education for university students and acknowledge them toward using distance learning tools by adopting an extended technology acceptance model (ETAM). The external variables of TAM are computer anxiety (CA), self-efficacy (SE), experience (XP), and enjoyment (ENJ) which explained 61.7 % of the variance of perceived usefulness (PU), and 53.0 % of the variance of perceived ease of use (PEOU) of distance learning. Thus, this ETAM model was built to show that experience and enjoyment are two important critical constructs that cannot be ignored for the actual use of distance learning, which explained 87.7 % of actual use of distance learning.

CONCLUSION AND RECOMMENDATION

Distance learning adoption was widespread from the spring term of 2020 till 2021 along with COVID-19 pandemics. In addition, it is expected to be able to continue in the fall term 2021-2022 or longer, as the new Delta variant has been spread. Thus, understanding the behavior intention of higher education students for distance learning adoption is important to sustain the education quality.

The study examined the actual use of distance learning tools by applying an extended technology acceptance model (ETAM) that was computer anxiety, self-efficacy, experience, and enjoyment. The external variables that were the most affected construct are experience and enjoyment. Self-efficacy is another construct that was affected by computer anxiety negatively. For example, university learning centers can gather in a communal learning portal for the same distance learning tools and form an experienced team for each university to register their failures and obstacles that will be able to be collected as a handbook to raise self-efficacy. These issues, which are registered in a handbook, can also be a precedent for the other universities in the future, which are faced with the same issue that increased experience. In addition, training videos can be stored in university servers so that students can access video files from anywhere at any time via mobile phones or laptops to decrease computer anxiety. Furthermore, instructors should support students by creating a gamification strategy for the content of lectures, such as holding points, winning badges, and extracting daily or weekly performance graphs on a student-oriented syllabus basis to increase enjoyment.

The study contributes to higher education institutions through e-learning platform providers by applying the ETAM model to how students have a perceived actual use of distance learning. This will help the students, who struggled with distance learning, exhibit the factors affecting distance learning for the future participants.

LIMITATION AND SUGGESTIONS

Although the proposed model has important implications for students and higher education institutions, some limitations were found. First, the study will be applied in different regions in different periods, and the results will be different. Second, students studying varying courses will be added to obtain the different varying samples. Third, the ETAM model can be combined with the different theories in terms of TOE models to understand the external variables affecting distance learning adoption such as technological readiness, and regulatory support.

Testing the proposed model for different cultures is recommended to show the distinctions of countries over actual using distance learning. Different analyses such as cluster analysis can be applied for separate departments such as social sciences, natural, and applied sciences to provide separate solutions for each department.

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