Investigating Factors Affecting Students' Intention, Acceptance, Behavior and Adoption of e-Learning Systems during the Systematic Literature Review Pandemic of Covid19: A

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1. Introduction

COVID-19 became a disaster problem globally (Dwivedi *et al.,* 2020). This pandemic affects all sectors and probably changed the world as a new lexicon, a new social norm (Dwivedi *et al.,* 2020). In the case of Covid-19, IT played an essential act in educational institutions by helping students to overcome the challenges and gives them a chance to apply E-learning (Khan, Nabi, Khojah & Tahir, 2020). During this quarantine time, educational institutions transferred the traditional learning process to E-learning process (Alavudeen *et al.,* 2021). Besides, E-learning has never been adopted before the Covid-19 pandemic that obligated to apply E-learning system (Khan *et al.,* 2020). Nowadays, during the Covid-19, the majority of the educational institutions are dealing with e-learning in order to facilitate the learning process (Khan *et al.,* 2020).

Students and educational institutions globally faced several obstacles and challenges to adopt the E-learning such as communication between instructors and students, connection problems, electricity, etc. (Abbasi, Ayoob, Malik & Memon, 2020). More attempts are needed by users to create an advanced pedagogy to improve student's learning. Furthermore, this paper is considered as one of the few studies to understand the intention of E-learning usage process in different contexts. Besides, the results of this research will enhance universities' decision makers to make their students familiar with the new technologies, software and applications included in the E-learning process and will help the organizations that work in IT domain to develop more users' friendly applications that support the educational process.

The purpose of the research is to investigate aspects influencing students' adoption of E-learning systems and to predict the main reasons behind intention of E-Learning usage. These aims will be achieved by investigating 33 empirical studies in different E-Learning contexts in a systematic manner. This paper is composed by different sections, started by the introduction, followed by the theoretical background, then the methodology. It follows by presenting a literature review in a systematic way, then the discussion and conclusions and finally future research are presenting in the end on this study.

2. Theoretical Background

This study will analyze the students' expertise, expectations, student engagement and perception of E-learning. The most common theories adopted by the researchers to clarify students' motives toward E-learning systems are Theory of diffusion of innovations, Technology acceptance model (TAM) and Unified Theory of Acceptance and Use of Technology (UTAUT).

"Theory of diffusion of innovations" is considered one of the theories employed for the research of technology acceptance in educational institutions. Rogers (1995), according to this theory, five variables affect the student's adoption toward E-learning. While relative advantage, observability, trialability and compatibility positively affect students' adoption, complexity negatively affect the degree of adoption.

Technology Acceptance Model" (TAM) states that two factors are positively impact students' attitude toward student' intention to use E-learning system. These aspects are perceived usefulness (PU) and perceived ease of use

(PEOU). Some studies adopted the model of (TAM) developed by Davis (1989) (Arbaugh *et al.,* 2009; Liu *et al.,* 2010; Zhang *et al.,* 2008).

UTAUT model is considered as an extension of (TAM) (Davis, 1989). according to this model, behavioral intention is estimated by performance expectancy which referred to the level to which the student expects that using the platform will assist him for better performance (Venkatesh *et al.,* 2003), effort expectancy which represented as the level to integrate easily in the platform (Venkatesh *et al*., 2003), subjective norms is considered as the level to which a person influenced by others in order to apply the platform (Venkatesh *et al.,* 2003) and facilitating condition is clarified as a level to which a person has faith that an technical infrastructure had being to help engaging in the platform (Venkatesh *et al*., 2003). Moreover, behavioral intention is positively affect individual behavior. Besides, many variables are considered as control variables such as experience, age, gender, voluntariness of use.

3. Methodology

This paper will adopt a systematic literature review to investigate factors impacting intention to use E-learning. The review begins from the search for several terms such as (intention to use E-learning, Covid-19, coronavirus, online learning and E-learning) covering the period from 2019 till 2021 using Google Scholar. The results revealed huge number of research. 33 empirical studies were selected out of many studies conducted in this field. Therefore, the research analysis conducted in four parts. Studies chosen from divers academic journals in English language. In addition, books are excluded in this systemic review as they are not peer-reviewed. Furthermore, the conceptual

articles were excluded and the empirical were kept for the research. Studies were eligible for inclusion if they addressed higher education acceptance of E-learning during Covid-19. In the last part, the search was summarized by presenting inclusion criteria; the abstract of all the studies found had to be reviewed to provide that they were within the scope of this research. Moreover, all studies were analyzed and narrowed in a table format up to the author's access to find articles. Finally, the discussion of the results will be briefly summarized.

4. Literature review

Students' perceptions of E-learning are an essential indicator of learning quality. The results of learning are depended on several aspects that influence student's intention to accept E-learning (Khan, *et al.,* 2020; Muhammad, Shaikh, Naveed & Qureshi, 2020). According to Alhamad (2020), perceived enjoyment, accessibility and PEOU are predicators of student's intention. Moreover, according to (Siron, Wibowo & Narmaditya, 2020) many factors affected student's intention of E-learning usage, these factors are considered as predicators to students' motives toward e-learning. The predictors of the intention of student to adopt E-learning are perceived enjoyment (Lew, Lau & Leow, 2019), students experience (SE), computer anxiety (CA), perceived self-efficacy (PSE) (Dogru, 2020), PEOU and perceived usefulness. Furthermore, Taat & Francis, (2020) revealed that factors impacting the student's adoption of E-learning are the information provided, lecturer characteristics, usability, system quality and available technical support.

In addition, numerous studies (Almaiah & Alyoussef, 2019; Alghizzawi et al., 2019; Al Kurdi, Alshurideh, Salloum, Obeidat & Al-dweeri, 2020, Asvial,

Mayangsari & Yudistriansyah, 2021, Al-Rahmi, Yahaya, Aldraiweesh, Alamri, Aljarboa, Alturki & Aljeraiwi, 2019; Cicha, Rizun, Rutecka & Strzelecki, 2021; Ejdys 2021; Kamal, Shafiq & Kakria, 2020; Mehta, Morris, Swinnerton & Homer, 2019; Marandu, Makudza & Ngwenya, 2019, Nikou & Maslov, 2021, Tiwari, 2020; Rafiee & Abbasian-Naghneh, 2021; Samsudeen & Mohamed, 2019; Sakarji, Nor, Razali, Talib, Ahmad & Saferdin, 2019; Thongsri, Shen & Bao, 2020; Tussardi, Izzati & Saputra, 2021; Teo, Zhou, Fan & Huang, 2019; Salloum, Alhamad, Al-Emran, Monem & Shaalan, 2019; Salloum, Al-Emran, Habes, Alghizzawi, Ghani & Shaalan, 2019; Winarno, Mas'oud & Palupi, 2021; Wongwatkit, Panjaburee, Srisawasdi & Seprum, 2020; Yakubu, Dasuki, Abubakar & Kah, 2020) stated that it has a positive influence on students' intention E-learning by applying the following theories TAM and Theory of diffusion of innovations. However, the findings of (Diab & Elgahsh, 2020)'s study showed that student's attitude had a negative effect toward intention to use E-learning.

Moreover, referring to (Pham, Limbu, Bui, Nguyen & Pham, 2019) who revealed that E-learning service quality was the most essential division of overall E-learning service quality, then the E-learning teacher and then the course materials quality followed by E-learning administrative and support service quality. Moreover, the relationship between overall E-learning service quality and E-learning student satisfaction are positively related.

According to (Zhang, Cao, Shu & Liu, 2020), the following variables (System quality (SQ), social influence (SI) and facilitating conditions (FC)) positively impact on E-learning behavioral intention (BI). However, information quality (IQ) has no impact on BI. Moreover, FC is no significantly related to BI and use behavior (UB).

Referring to Chopra, Madan, Jaisingh & Bhaskar, (2019), the study revealed that the three following categories (service quality, system quality and information quality) of E-learning system contribute positively in improving E-learning system in order to satisfy users.

The table 1 revealed the major factors affecting students' intention to adopt E-learning by different studies in different context that affected student's intention to use E-learning system.

Table 1: Factors affecting students' intention to adopt E-learning system

Acticle Number	Journal	Year and Authors	Variables	sample Size,	statistical techniques	Major Findings
1	Interactive Technology and Smart Education.	Sabraz Nawaz Samsudeen Rusith Mohamed March 2019	1. Performance expectancy (PE) 2. Effort expectancy (EE) 3. Social influence(SI) 4. Work life quality 5. Hedonic motivation 6. Internet experience 7. FC 8. Behavioral intention 9. Use behavior (UB).	400 universities students in Sri Lankan.	SPSS 25 and AMOS 22, structural equation modeling SEM	The constructs of UTAUT2 significant positively toward behavioral intention to use and UB.
2	IEEE Access.	Salloum, Alhamad, Al-Emran, Monem, and Shaalan, 2019.	1. CSE 2. SN 3. Perceived enjoyment (PE) 4. System quality(SQ) 5. Information quality (IQ) 6. Content quality (CQ) 7. Accessibility (ACC) 8. Computer playfulness(CP) 9. PU 10. PEOU 11. Attitude	300 students in two following Universities (university of Fujairah and the British University in Dubai).	Partial Least Squares-Structural Equation Modeling (PLS-SEM) approach	from the system characteristics(SQ, IQ, CQ), only SQ is positively related to PEOU and IQ is positively related to PEOU. CSE, PE, ACC and CP have a significant impact on PEOU. PE, and ACC is positively influence PU. PEOU is positively related to PU. PEOU and PU are positively related to attitude and to behavioral intention. behavioral intention is positively related to actual use.

			12. Behavioral intention 13. Actual Use			
3	Innovations in Education and Teaching International.	Thongsri, N., Shen, L., & Bao, Y*. (2019).	1. CSE 2. PU 3. PEOU 4. Academic Major 5. Intention to use	academic major groups before being universities' and colleges' admission	(SEM) based on the two-step approach	The outcomes stated that STEM"s score of CSE, PEOU and behavioral intention to use e-learning are all greater than non-STEM"s.
4	Interactive Technology and Smart Education.	Chopra, G., Madan, P., Jaisingh, P. and Bhaskar, P., 2019.	1. E-learning system is related to (SQ), (IQ) and service quality(SeQ). 2. E-learning effectiveness dimension included user satisfaction and net benefits.	Students enroll on Coursera website for an e-learning program at Universities of north India	SEM and SPSS version 17.0 and AMOS version 21.0.	SQ and SeQ have a great integration in e-learning system with comparison to information quality. The following divisions (SQ, SeQ and IQ) integrated to user satisfaction and net benefits. Students are satisfied with e-learning websites.
5	IEEE Access.	Almaiah, M.A. and Alyoussef, I.Y., 2019.	1. Course Design (CD) 2. Course content support (CCS) 3. Course assessment (CA) 4. Instructor characteristics (IC) 5. PE 6. EE 7. SI 8. FC	507 university's learners at King Faisal University.	(SEM)	CD, IC, CCS and CA are positively influence on the actual use. SN has an insignificant relationship with behavioral intention. PE, EE and FC are positively related to behavioral intention. behavioral intention is positively related to actual use.

| 6 | Association for Educational Communications and Technology | Timothy Teo Mingming Zhou Andy Chun Wai Fan Fang Huang 2019 | 1. PU
2. PEOU
3. Attitude
4. Perceived Behavioral control (PBC)
5. Output quality
6. Trialability
7. SN
8. complexity | 564 university's students of Macau | Confirmatory factor analysis (CFA) | PU and PEOU had significantly impacted attitudes.
PU, attitude, and PBC play an important role in students' behavioral intentions.
PU was positively related with PEOU, output quality, trialability, as well as SN. Technology complexity and trialability are positively related to PEOU. |
| 7 | Computers & Education | Ashwin Mehtaa, Neil Morrisb, Bronwen Swinnertonb, Matt Homerb, 2019 | 1. Hedonic motivation
2. Habit
3. SI
4. Price value
5. PE
6. EE
7. Behavioral intention | Both 113 UK workers and 160 Gambian workers had a variety of educational and professional backgrounds | Partial Least Squares (PLS) | All predicators affect (BI) in both country groups except (SI) had no direct effect on (BI). |

8	Heliyon	Lillian-Yee-Kiaw Wang, Sook-Ling Lew, Siong-Hoe Lau, Meng-Chew Leow, 2019	Five usability factors namely 1. CSE 2. Enjoyment (E) 3. PEOU 4. PU 5. User Perception (UP) 6. Continuance Intention (CI).	170 IT students in one of the private universities in Malaysia.	SMARTPLS 3.0.	All the five independent variables are positively related (CI). CSE and E significantly predict continuance intention, while PEOU, PU and user perception were insignificant. .
9	International Journal of Learning, Teaching and Educational Research	Edward E. Marandu1, Forbes Makudza, Sothini N. Ngwenya,2019	1. PU 2. PEOU 3. Intention to use 4. BI 5. Actual Use	sample is 337 students from Bindura University of Science Education (BUSE) in Zimbabwe.	IBM Statistical Product and Service Solutions (SPSS) software version 25.	PU is positively related to intention to use. However, PEOU was not positively related to intention to use. Behavioral Intention has a positive linkage with Actual Use
10	Journal of Information System and Technology Management	Siti Rosnita Sakarji Khalijah Binti Mohd Nor Masliza Mohd. Razali Nashrah Talib Nurbarirah Ahmad Wan Aisyah Amni Wan Mohamad Saferdin, 2019	1. PEOU 2. PU 3. Attitude	A total of 50 students that undergone the Diploma in Office Management and Technology programme from Faculty of Business and Management, UiTM Melaka.	SPSS.	PEOU and PU has a significant impact on attitude toward E-learning.
11	International Journal of Information Technology and Language Studies	Mahmoud Alghizzawi1, Mohammed Habes, Said Salloum, Mazuri Abd.	1. knowledge sharing, 2. Social media features	410 graduate and postgraduate students.	the PLS-SEM using Smart-PLS	Knowledge sharing, social media features and motivation to use social media systems, positively affected the PU and PEOU, which, in turn, have a positive linkage toward the e-leaning acceptance.

	(IJITLS)	Ghani1, Chaker Mhamdi and Khaled Shaalan, 2019	3. motivation to use social media systems, including Facebook YouTube and Twitter 4. PU 5. PEOU 6. E-learning system acceptance			
12	Computer Assisted Language Learning.	Marzieh Rafiee and Salman Abbasian-Naghneh, 2019	1. PU 2. PEOU 3. PE 4. E-learning motivation 5. Online communication self-efficacy 6. language learners' acceptance and readiness of e-learning	80 of university students majoring in English learning.	Smart partial least squares (smartPLS) software	PE had no effect on e-learning acceptance and readiness among language learners through the mediating role of perceived usefulness. while others has a positive impact.
13	Ieee Access	Al-Rahmi, W. M., Yahaya, N., Aldraiweesh, A. A., Alamri, M. M., Aljarboa, N. A., Alturki, U., & Aljeraiwi, A. A. (2019).	1. Relative advantages 2. Observability, 3. Trialability 4. Perceived compatibility(PC) 5. Complexity, 6. PE 7. PEOU 8. PU	1286 students utilizing systems of E-learning in Malaysia.	AMOS 23 usedfor data analysis. (SEM) and confirmatory factor analysis (CFA) were used as the major tools of analysis.	Six perceptions of innovation characteristics have a positive impact on BI. relative advantages, observability, trialability, perceived compatibility, complexity and PE on the PEOU is noteworthy.

						A strong impact of the relative advantages, complexity, trialability, observability, perceived compatibility, and PE on the PU.
14	Asian Journal of Business and Technology	Gayan Nayanajith, D. A., Damunupola, K.A. and Ventayen, Randy Joy M., 2019	1. Association of innovation (INO) 2. PEOU 3. E-learning Acceptance AEL	271 students of Sri Lankan private international Schools.	ANOVA, ANCOVA, hierarchical regression, Hayes's process for moderation analyses were used.	A positive relationship of INO and PEOU variables towards AEL
15	International Journal of Electrical and Computer Engineering (IJECE)	Ahmad Qasim Mohammad AlHamad, 2020	1. PE 2. Accessibility 3. SN 4. PU 5. PEOU 6. Intention to use	366 university students.	Structure equation modeling (PLS-SEM).	All hypotheses are supported expect of SN and PU are not supported
16	American Journal of Nursing Science	Gehan Mohamed Abd El-Hamed Diab ,Nahid Fouad Elgahsh, 2020	1. Attitude 2. Infrastructure 3. Technology 4. Technical 5. Management Support 6. Instructors' characteristics 7. E-learning acceptance	627 students at Faculty of Nursing, Menoufia University, Egypt	Statistical Package for Social Science (SPSS/version 23).	infrastructure and technology, technical and management support, and instructors' characteristics are negatively related to the attitude which in turn affect negatively the acceptance of E-learning
17	Springer Nature Switzerland AG	Said A. Salloum, Mostafa Al-	1. Social media practices 2. PU	A total of 410 graduate and undergraduate students enrolled at the	(PLS-SEM)	social media practices have positive impact on both (PU) and (PEOU) which in turn have

		Emran(&) , Mohammed Habes, Mahmoud Alghizzawi, Mazuri Abd. Ghani, and Khaled Shaalan, 2020	3. PEOU 4. E-learning acceptance	British University in Dubai, UAE.		a positive impact on acceptance of e-learning systems.
18	Education and Information Technologies	Mohammed Nasiru Yakubu,Salihu Ibrahim Dasuki,A Mohammed Abubakar, Muhammadou Kah,2020	1. SI 2. FC 3. System quality (SQ) 4. PEOU 5. PU 6. Behavioral intention to use	1116 students in four Nigerian universities	(SEM) and artificial neural network (ANN) techniques.	SI, FC, System quality, PEOU and PU are positively associated toward BI.
19	Journal of Technology and Science Education	Yubaedi Siron, Agus Wibowo, Bagus Shandy Narmaditya August 2020	1. Students experience (SE) 2. (PE) 3. Computer anxiety (CA) 4. PSE 5. BI 6. PEOU 7. PU	210 students can be used for further analysis.	SEM-PLS	PE, SE, SA, and PSE are positively associated to students' intention in using E-learning. These findings also confirm that both PEOU and PU can explain the students' intention in utilizing e-learning. All hypotheses are supported except the linkage between SE,CA and PSE on PU
20	Technology in Society	Syeda Ayesha Kamal, Muhammad Shafiq, Priyanka Kakria 2020	1. Usage intention 2. PEOU 3. Technological anxiety 4. SI	275 participants in Pakistan.	PLS	Usage intention is a function of PEOU, technological anxiety, social influence, PU, trust, facilitating conditions, perceived risk, and resistance to technology.

			5. PEOU 6. Trust 7. FC 8. Perceived risk 9. Resistance to technology.			
21	International Journal of Higher Education	Muhamad Suhaimi Taat1 & Agatha Francis Muhamad Suhaimi Taat,2020	1. Usability 2. PEOU 3. Lecturer characteristics 4. Information quality (IQ) 5. SQ 6. Technical support.	Sample 230 students were selected from undergraduate programmes	SPSS software, version 20.0 Items	usability, lecturer characteristics, SQ, IQ, available technical support, PEOU have a positive effect toward students' acceptance of E-learning
22	Interactive Learning Environments	Zhaoli Zhang, Taihe Cao, Jiangbo Shu and Hai Liu, 2020	1. (SQ) 2. (SI) 3. (FC) 4. (BI) 5. (IQ) 6. Use behavior	287 valid questionnaires were Collected from students.	Structural equation modeling analysis	(SQ), (SI) and (FC) are positively impacted on (BI) whereas (IQ) has none on BI. No significant relationship among FC, BI and use behavior (UB), and only moderator effect of gender exists. SQ and SI have a greater effect on male than female.
23	The University of Jordan, Amman, Jordan	Barween Al Kurdi, Muhammad Alshurideh,Said Salloum, 2020	1. CSE 2. SI 3. Enjoyment 4. System Interactivity 5. Computer Anxiety (CA) 6. Technical support	365 university students.	(SEM)	CSE, SI, PE, System Interactivity, CA, Technical support, PU, PEOU, Attitude have a positive impact on Behavioral Intention to Use.

			7. PU 8. PEOU 9. Attitude 10. Behavioral Intention to Use			
24	Test engineering and management	Prashant Tiwari,2020	1. PE 2. EE 3. FC 4. SI 5. BI 6. Perceived cost.	430 universities students at GLA Mathura (India).	Multiple Regression technique	PE, EE and FC have significant impact on BI. However, A weak significant effect between SI on BI. an insignificant effect between Perceived cost and BI.
25	International Journal of Technology	Muhamad Asvial1, Jihar Mayangsari1, Alvin Yudistriansyah (2021)	1. Performance Expectation 2. EE 3. BI 4. Attitude 5. SI 6. Perceived cost 7. FC	Sample are 50 junior students high schools in Jakarta and Tangerang.	(SEM)	Performance expectation, EE, Attitude, SI and FC has a positive impact on BI. Perceived cost has a negative impact on BI.
26	The International Journal of Information and Learning Technology.	Shahrokh Nikou, Abo Akademi, Abo Akademi, 2021	1. Awareness 2. PU 3. PEOU 4. Perceived challenges 5. Intention to use 6. Perceived educational institutions (PEI)	131 university students.	PLS-SEM	PEI, Perceived challenges and awareness not only directly affect students' intention but also such effects are mediated through PU and PEOU of e-learning systems. The gender and length impact the intention to use.

27	Sustainability	Mohammed Arshad Khan, Vivek, Mohammed Kamalun Nabi, Maysoon Khojah and Muhammad Tahir,2021	1. Perception of Students 2. (PU) 3. Perceived Self-Efficacy (PSE) 4. PEOU 5. BI	184 university students of National Capital Territory (NCT) of Delhi, India namely Delhi University, Jamia Millia Islamia (Central University) and Guru Gobind Singh Indraprastha University.	AMOS (version 24) software and SPSS (version 25)	all independents variables (Perception of students, PSE, PEOU) showed a positive impact toward BI
28	Jurnal Teknik Informatika dan Sistem Informasi	Rifqi Ramadhan Tussardi1, Berlian Maulidya Izzati, Muhardi Saputra,2021	1. PE 2. Technical infrastructure 3. Organizational infrastructure 4. Socialization of CeLOE, 5. FC	100 students' from Telkom University.	IBM SPSS Statistics 26 software.	All hypotheses are accepted.
29	WSEAS TRANSACTIONS on BUSINESS and ECONOMICS	JOANNA EJDYS, 2021	1. (PU) 2. (PEOU) 3. (FC) 4. (CSE) 5. Preparedness level (PL) 6. Previous experience (PE);	982 completed questionnaires were received.	Using the CAWI (computer-assisted web interview) technique.	The PU played a crucial role in building the attitude of students toward e-learning and achieving satisfaction and personal development of the users. Results confirmed that men had declared a high level of CSE. The variable "facilitating conditions" received higher marks from women.

			7. three output variables (satisfaction and personal development (SPD), attitude) 8. Intention to use (IU). 9. Satisfaction 10. Personal development			
30	Journal of Asian Finance, Economics and Business	Wahyu Agus WINARNO, Imam MAS'UD, Trias Widya PALUPI, 2021	1. PE 2. Self-efficacy 3. SN 4. PU 5. PEOU 6. Behavioral intention to use.	Sample 150 respondents of OVO users.	The research model was tested by using the structural equation modeling (SEM) approach.	SN has a positive impact on PU. PE positively impact on PEOU. Applications' self-efficacy have no effect on PEOU. A significant effect of PEOU, PU toward BI.

31	Sustainability	Cicha; Rizun; Rutecka; Strzelecki, 2021	1. Experience 2. Subjective Norms (SN) 3. Enjoyment 4. Computer Anxiety 5. Self-Efficacy 6. PU 7. PEOU 8. Attitude 9. Intention to use 10. Actual use	670 Polish first-year undergraduate students.	SEM, SmartPLS 3 software.	All hypotheses are supported expect Computer Anxiety had no significant effect either PU nor PEOU. SN have not significant effect on PEOU. There is no significant impact on PEOU on PU.
32	In *European, Asian, Middle Eastern, North African Conference on Management & Information Systems*	Habes, M., Ali, S., Khalid, A., Haykal, H. A., Elareshi, M., Khan, T., & Ziani, A. (2021, March).	1. E-learning 2. Student's perceptions 3. Substitute 4. Academic performance	314 students from Sahiwal Medical College, Sahiwal, Pakistan.	One-way analysis of variance (ANOVA) was employed.	E-learning is positively related to student's perception and Substitute. Student's perceptions and substitute are positively related to academic performance.
33	*Education and Information Technologies,*	Mailizar, M., Burg, D., & Maulina, S. (2021).	1. SQ 2. Experience 3. PU 4. PEOU 5. Attitude 6. Intention to use 7. Actual use	109 universities students in Indonesia.	(SEM) and SMART PLS 3.0 software	All hypotheses are accepted.

5. Discussion

After grouping the 33 articles, this study is able to identify four vital findings. These findings will inspire the new ideas for future research. In the coming parts, these ideas will be discussed briefly.

5.1. The Context of the research applied:

The 33 articles were selected from different contexts during the pandemic of Covid-19. The following selected research are categorized by several countries as follows: Sri Lankan, Dubai, China, North India, Saudi Arabia, Macau, UK, Gambian, Malyzia, Zimbabwe, United Arab Emirates, Nigeria, Egypt, Indonisea, Pakistan, India. According to the results of the selected articles, the findings revealed that different contexts showed different results of E-learning adoption.

Student's adoption of E-learning is affected by the context of where the students belong. In another word, student's perceptions with different backgrounds react differently to the E-learning system. In line with the results of the latest research, the current research findings revealed a positive association between the students' perceptions toward the E-learning system and the quality of the services provided. Therefore, the E-learning system gives greater motivation and chances for students to improve skills comparing to traditional learning. Moreover, the majority of the sample size chosen was hundreds of university students in different domains.

The first proposal will be mentioned as follows:

P1. Examining and investigating several contexts by preparing a study comparing two different contexts to understand students' points of view about

the degree of impact of E-learning usage applicable for undergraduate students.

5.2. *Factors that affecting intention to use E-learning*

E-Learning is one of the contents addressed in investigating the research analyzed. Due to the increasing adoption of E-learning, a growing body of research has highlighted the factors influence on students' behavioral intention toward E-learning. Previous research has analyzed the applicability and acceptance of E-learning by discovering the aspects that influence the intention in using E-learning (Almaiah & Alyoussef, 2019; Alghizzawi, Habes, Salloum, Ghani, Mhamdi & Shaalan, 2019; Al Kurdi *et al.,* 2020, Asvial, Mayangsari & Yudistriansyah, 2021, Al-Rahmi *et al.,* 2019; Cicha, Rizun, Rutecka & Strzelecki, 2021; Ejdys 2021; Kamal, Shafiq & Kakria, 2020; Mehta, Morris, Swinnerton & Homer, 2019; Marandu, Makudza & Ngwenya, 2019, Nikou & Maslov, 2021, Tiwari, 2020; Rafiee & Abbasian-Naghneh, 2021; Samsudeen & Mohamed, 2019; Sakarji *et al.,* 2019; Thongsri, Shen & Bao, 2020; Tussardi, Izzati & Saputra, 2021; Teo, Zhou, Fan & Huang, 2019; Salloum *et al.,* 2019; Salloum, Al-Emran, Habes, Alghizzawi, Ghani & Shaalan, 2019; Winarno *et al.,* 2021; Wongwatkit, Panjaburee, Srisawasdi & Seprum, 2020; Yakubu, Dasuki, Abubakar & Kah, 2020).

The suitability and adaptability of E-learning system depends on aspects that facilitate students' to use the system of E-learning. Factors such as PE, EE, SI, Work life quality, Hedonic motivation, Internet experience, FC, SQ, IQ, CSE, PE, CQ, Accessibility (ACC), Computer playfulness (CP), Association of innovation (INO), Technical infrastructure, Organizational infrastructure, PEOU and PU determine whether or not the user decides to use a service

again. Another factor is usability (Lew *et al.,* 2019), that refers to the general usage and ease of use of e-learning systems. Moreover, the design of E-learning is considered as a factor that influence students' acceptance to use E-learning systems. In addition, the design of online courses should fit the psychosocial characteristics of students' and meet their needs and expectations (Ren, Dai, Zhao, Fei & Gan, 2017). Moreover, further research is required to clarify the factors that influence of E-learning adoption. Based on this discussion, the following proposition will be concluded as follows:

P2. Creating an effective E-learning system in specific context require to take the critical factors that affect students' behavior in this context.

5.3. Theories applied in E-learning acceptance

Some researchers rely on the following theories to better understand students' behavior toward E-learning system. These theories include, Theory of diffusion of innovations, (TAM) and (UTAUT) in E-learning acceptance (Almaiah & Alyoussef, 2019; Alghizzawi et al., 2019; Al Kurdi *et al.,* 2021, Al-Rahmi *et al.,* 2019; Cicha, Rizun, Rutecka & Strzelecki, 2021; Ejdys 2021; Kamal, Shafiq & Kakria, 2020; Mehta, Morris, Swinnerton & Homer, 2019; Marandu, Makudza & Ngwenya, 2019, Nikou & Maslov, 2021, Tiwari, 2020; Rafiee & Abbasian-Naghneh, 2021; Samsudeen & Mohamed, 2019).

These aforementioned studies examined a strong validation of these theories. The aforementioned theories enhance the marketing scholars to comprehend aspects affecting on student adoption of E-learning system. Based on this discussion, the following proposition will be concluded as follows:

P3. Due to the importance of the theories that explaining student adoption of E-learning system, more research work are required to validate and extend these theories empirically.

5.5. E-learning requirements during the pandemic of Covid-19

The adoption of E-learning system needs several modern interfaces and friendly platforms to improve users' intention toward E-learning system. Thus, the successful acceptance of E-learning needs suitable infrastructures, willingness to adapt E-learning system.

New E-learning system requires user friendly designs to enhance student's ability to interact with their courses. Moreover, the secure connection is one of the requirements needed to guarantee the users' safety and to make it easier and enjoyable to use the system. Thus, the study explored the following proposition:

P4. Research revealed that several requirements are critical to achieve the success and improve the performance of E-learning system.

6. Conclusions

This paper concentrated on the aspects that impact intention in using E-learning for higher educational institutions, covering different contexts during the pandemic of Covid-19. Different research in E-learning field had examined multiple factors that affect the acceptance of E-learning system rather than improving a holistic students' perspective and research propositions for future research related to E-learning. This paper classified the selected research according to several criteria such as (Authors and year, variables, sample size, statistical techniques and major findings). This classification used in this systematic literature review differed from other systematic literature reviews and provide a deeply clarification of the aspects

that influence adoption of E-learning. This paper presents some important research propositions valuable that can be used as a base for further studies. Although this paper enriches the marketing literature related to E-learning and provides a significant practical contribution to the decision makers in the educational sector, it is not free of limitation.   First, the current research is based on a qualitative analysis so further quantitative research is required to improve the result generalizability. Second, this study reviewed 33 articles. Whereby, the researcher recommends further studies to extend the number of reviewed articles. Third, the reviewed articles were limited to quantitative research, so it is recommended for future studies to review both qualitative and quantitative.

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