

FACTORS AFFECTING THE ACCEPTANCE OF OPEN LEARNING AS E-LEARNING PLATFORM BY TECHNICAL COURSE STUDENTS

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Abstract

Transformation of current education system by instilling the capability of lifelong learning among the students is imperative to prepare the younger generation for the future workplace. This study analyses the use of Open Learning as e-learning platform among the technical course students and to identify the factors that influence their acceptance of this e-learning system via Technology Acceptance Model (TAM). A model consisting of eight variables was proposed and thirteen hypotheses have been generated from the connections between these eight variables. These variables include perceived usefulness, perceived ease of use, intention to use, subjective norm, experience, perceived self-efficacy, online system quality, and interactive learning activities. Questionnaire was given to the students enrolled in vector calculus online course at Open Learning system and 54 respondents were recorded. The data were then analysed via structural equation model using partial least square method. Nine out of thirteen hypotheses were supported by the analysis. It was discovered that subjective norm and online system quality variables have significant effect on the students' perceived ease of use and perceived usefulness of the online course in Open Learning. Perceived usefulness was the key element that linked the external variables and perceived ease of use to the intention to use the Open Learning system. This showed that the acceptance of students towards Open Learning platform was heavily influenced by the quality and accessibility of the online course. Hence, educators should properly design and develop their online course content such that students will be attracted to utilize the online course in Open Learning.

Keywords: E-learning, Lifelong learning, Online course, Technical course, Technology acceptance model (TAM).

1. Introduction

The Fourth Industrial Revolution (4IR) is a concept that is hotly debated and discussed globally. A recent white paper published by the World Economic Forum at Davos, Switzerland indicated that the 4IR would have a significant impact on our daily life, where it shapes the future of education, gender and work [1]. At the same time, 4IR will also reinvent the future of jobs in which the existing approaches of how the workforce is trained and talent is developed have to be revolutionised [2]. The rapid advancement of technology and globalisation are significantly shifting the business models in all sectors, resulting in the creation of jobs that require some versatile skillsets. This put direct pressure on the government and industry as the education and training systems today are largely inadequate to meet the needs of the new jobs.

To cope with the rapid evolution of the job market in the future, the education system has to be transformed such that the graduated workforces possess a wide variety of skillsets and behaviour that can sustain long-term careers in economics of the future [1]. One such effort that can be taken is to empower the students to be lifelong learners, where they will take ownership to upgrade their skills throughout their lifetime [3]. The Ministry of Manpower in Singapore has initiated a program known as Skills Future, with one of the key focus areas is to encourage their people to take ownership of their skills development and lifelong learning [4]. Hence, it can be seen that the culture of lifelong learning has received much recognition from the well-developed countries in preparing for the 4IR.

The Malaysia government has recognized the importance of lifelong learning through the implementation of the Blueprint on Enculturation of Lifelong Learning for Malaysia 2011-2020 in 2011 [5]. In this blueprint, lifelong learning has been known as the third pillar of human capital development after the school and tertiary education systems. The government has called the society to embrace the opportunity to pursue knowledge or skills that have been made available to all. Regardless of the age group or occupation of the learners, the challenges in promoting lifelong learning lie in the availability of knowledge and information as well as the constraint to be present physically at the traditional educational institutions. The traditional educational system (classroom-based) is having difficulty to provide learners from various backgrounds access to knowledge and information [6]. Thus, an alternative approach to access knowledge and information has been explored in raising awareness and promoting the culture of lifelong learning.

Considering the positive impacts of e-learning on the students' performance and potential of e-learning in promoting lifelong learning [7], the Malaysia government has strongly encouraged the educators to incorporate e-learning in the educational systems by announcing that Open Learning is the official Massive Open Online Course (MOOC) platform (e-learning medium) for all public institutions of higher education in Malaysia [8-11]. Learning style can be an indicator for students' learning behaviors and measure whether a student is suitable to learn via MOOCs [12-14].

Despite the growing e-learning market and the perceived benefits of e-learning aforementioned, it was reported that a high rate of learners who enrolled in the online courses did not fully complete or withdrew from the courses [15]. This phenomenon has attracted the attention of researchers and educators to probe into the issues of high withdrawal and non-completion rates in online courses. One particularly important factor is the acceptance of learners towards e-learning

platform and the learning style as compared to traditional classroom learning. Yilmaz [16] reported that the students' e-learning readiness has a significant influence on their satisfaction and participation in the flipped classroom learning. Violante and Vezzetti [17] reported that only little attempt taken to explore the learner's dimension, context, pedagogical considerations or technology aspects. Fita et al. [18] claims although e-learning suitable for lecturer-students information sharing, nevertheless their asynchronous nature prevents an efficient interaction, which may restrict the learning process.

The acceptance and usage of new technologies in learning has been extensively studied over the past decade, especially guided by the Technology Acceptance Model (TAM) [19-22]. This model provides a framework to identify the factors that affect learners' decision to use a new learning system. Although many higher educational institutions in Malaysia currently use Open Learning for teaching and learning as well as promoting lifelong learning, little research has been done to identify the factors that influence learners' acceptance of Open Learning-based e-learning system. Hence, the main objective of this paper is to analyse the use of Open Learning platform by a targeted group of university students and to identify the factors that influence their acceptance of this e-learning style of education via TAM model. The findings from this study will provide the educators insight on what can be done to improve and to boost the utilisation of e-learning among university students for better students' employability.

2. Theory and Hypotheses

2.1. Technology acceptance model (TAM)

TAM was first proposed by Davis et al. [23] and Fred [24] which specifies the causal relationships between the variables of user motivation (i.e., perceived usefulness, perceived ease of use, and attitudes towards technology) and outcome variables (i.e., behavioural intentions and technology use). This model assumes that the more accepting users are to new technology or system, the more they are willing to change their practices and spend their time and effort to start using the technology or system [25]. Perceived usefulness and perceived ease of use are the two key variables of TAM that have been used to analyse what causes people to accept or reject a new technology (directly or indirectly linked to explain the outcomes) [26]. The former variable is defined as the degree to which a learner believes that using a particular technology would be helpful to his or her performance. Similarly, perceived ease of use refers to the degree to which a person believes that using a particular technology would be free from effort (free from difficulty or great effort) [23]. These core variables are often associated with external variables such as self-efficacy, system quality and subjective norms, to name a few [19]. These external variables represent the factors (learners' characteristics and environmental factors) that might affect the perceived usefulness and perceived ease of use of users toward the technology. The outcome of TAM normally comprises variables such as behavioural intention and technology use. These two outcomes are associated with the intended behaviour and actual use of technology, respectively. As can be found in the literature review, the presence of TAM has helped to address the issue of how users accept and use technology. Quite a few papers have reported how TAM had been successfully used for analysing user behaviour as well as the intention of use of a wide range of technology, especially in the Open Learning [27, 28].

2.2. E-Learning

E-learning has emerged as one of the promising solutions to lifelong learning, where it may act as a catalyst that accelerates the cross-sectorial collaboration in lifelong learning [29-31]. E-learning is a web-based learning system that provides access to desired information, without the limitations regarding accessibility (time and location) [32, 33]. The benefits of e-learning have been widely recognised and reported in the past literature, which can be summarized to granting the learners greater autonomy in learning, reducing the barriers of learning, encouraging collaboration in learning, and enabling innovation opportunities in learning [34]. Interaction between human and technology is crucial to teach students to learn online [35].

2.3. Open Learning

Higher education has taken a change in paradigm from e-learning to Open Learning. Open educational resources provide learning materials for professional programmes and produce of a portal for educational community to share information and course content [36]. Open education covers and addresses all dimensions related to operational, legal, and visionary aspects throughout the analysis, design, realization, and evaluation of learning experiences to facilitate high quality education meeting the given situation, needs and objectives [37]. The cultural shift curved the educators on how the educators share, and evolved teaching and learning practices, processes and information has not established. There exists a gap between open access and open education [38]. Education consortia considering ways to work collaboratively on developing teaching resources and pedagogical practice such as open textbook project [39].

2.4. Vector Calculus

Students take the vector calculus subject in a semester which is for 14 weeks. The topics covered in vector calculus are as follows. Understanding basic complex and hyperbolic function, vector function, motion on a curve, curvature and components of acceleration, partial derivatives, tangent planes and normal line, divergence and curl, line integrals, independence of path, double integrals, double integrals in polar coordinates, Green's theorem, surface integrals, Stoke's theorem, triple integrals, divergence theorem, change of variables in multiple integrals, sets in the complex plane, functions of a complex variable and Cauchy-Riemann equations [40].

2.5. Research Model and Hypotheses

The relationship between the two fundamental variables in TAM is that perceived ease of use of technology affects the perceived usefulness. This relationship has been confirmed in several studies, yet the intensity of this relationship does not remain the same, depending on the degree of innovation of the technology [41, 42]. The usage of the e-learning system is affected by perceived ease of use and perceived usefulness. The Open Learning e-learning system offers numerous useful features that may enhance the learning process. If the students believe that the e-learning system may enhance their understanding of learning, they are more likely to use it. This relationship between the perceived usefulness and e-learning system use is supported by findings reported in other studies [43, 44]. Thus, the first hypothesis for this study is:

H1. Perceived usefulness has a positive effect on the intention to use Open Learning.

On the other hand, the influence of perceived ease of use on the acceptance of e-learning has been inconsistent. Some studies pointed out that this influence diminishes as the learners are becoming familiar with the system. This means that they become experienced in using the e-learning system and ease of use is no more a motivating or discouraging factor for them [45]. Despite this, this variable was taken into consideration in this study as the majority of the targeted students were exposed to Open Learning for the first time and the Open Learning platform is still new in Malaysia. Furthermore, if the students believe that the e-learning system is easy to be used, they are more likely to think that the e-learning system is useful too. Hence, the two hypotheses related to perceived ease of use are:

H2. Perceived ease of use has a positive effect on the intention to use Open Learning.

H3. Perceived ease of use has a positive effect on the perceived usefulness of Open Learning.

H1. Perceived usefulness and perceived ease of use have been traditionally used as determinants of technology acceptance for learning. However, these two variables do not fully represent the factors affecting the students' acceptance to use Open Learning. Hence, other external variables have been included in this study to make the proposed model more comprehensive in interpreting the students' acceptance of Open Learning. These external supports include, but are not limited to, perceived learning assistance, perceived community-building assistance, perceived academic performance, perceived compatibility with student tasks, technical support, perceived self-efficacy, attitude and system usage [19, 41, 46, 47]. The external variables considered in this study were: subjective norm, perceived self-efficacy, experience, online system quality, and interactive learning activities.

Students' intention to use the e-learning for the study is determined by their subjective norm. In brief, the subjective norm is defined as "the perceived social pressure to perform or not to perform the behaviour" in question [48]. In this context, the subjective norm can be interpreted as the extent to which a student perceives pressure from members of his or her environment to use Open Learning for e-learning. Various past studies have found that subjective norm had a significant and positive link with perceived ease of use and perceived usefulness [49-51]. This study investigated the relationship between subjective norm and perceived ease of use and perceived usefulness on the Open Learning with the following hypotheses:

H4. Subjective norm has a positive effect on perceived ease of use for Open Learning.

H5. Subjective norm has a positive effect on the perceived usefulness of Open Learning.

Pass literature has confirmed that acceptance of e-learning is influenced by the learners' experience in using computers, the internet and email. It was generally reported that students with experience in dealing with technology have more favourable feelings towards the ease of use and usefulness of an e-learning system [52, 53]. Therefore, the following hypotheses were made:

H6. Experience has a positive effect on perceived ease of use for Open Learning.

H7. Experience has a positive effect on the perceived usefulness of Open Learning.

One of the most common external factors for TAM is perceived self-efficacy. Perceived self-efficacy is defined as the belief (confidence) in one's capabilities to organise and execute the actions that need to be carried out [54]. It refers to the learner's belief on whether he/she can do with what he/she has, under a variety of circumstances or situations [19]. It was reported that students with high perceived self-efficacy were more willing to actively participate in the learning activities [55]. Thus, the influence of perceived self-efficacy on the acceptance of Open Learning as e-learning platform is formulated with the following hypotheses.

H8. Perceived self-efficacy has a positive effect on perceived ease of use for Open Learning.

H9. Perceived self-efficacy has a positive effect on the perceived usefulness of Open Learning.

The students need to have great enthusiasm and motivation to use the online course as their e-learning platform. To ensure that they stay in the course and complete the progress in e-learning, one of the attractive critical points is the e-learning system quality. A good e-learning platform is a system with great functionality and usability where it eases the users in using and navigating the platform for studying or carrying out a specific task [32]. Past studies have confirmed the positive influence of system quality on the use and satisfaction of e-learning in the study [56]. Hence, the current study set the following hypotheses.

H10. Online system quality has a positive effect on perceived ease of use for Open Learning.

H11. Online system quality has a positive effect on the perceived usefulness of Open Learning.

Though e-learning lacks the physical interaction among the learners themselves as well as with the teachers, it does provide an alternative way for interaction to occur among learners. Learning activities in the e-learning course can be designed in such a way that it promotes the learners to interact with each other as well as to share their knowledge and experience [34]. According to the study conducted by Liaw [34], the increased interaction between the learners and instructors can provide the opportunity for them to build their knowledge where the learning process involves mutual construction of understanding. Based on this finding, the effect of the interactive learning activities of the e-learning has also been included.

H12. Interactive learning activities have a positive effect on perceived ease of use for Open Learning.

H13. Interactive learning activities have a positive effect on the perceived usefulness of Open Learning.

3. Methodology

The methodology flow started with the enrolment of students in the online course, followed by the development of questionnaire based on TAM hypotheses and data collection from students through the questionnaire via simple random sampling technique, and ended with data analysis for the determination of acceptance or rejection of the developed hypotheses. This study was started with the enrolment of technical course students in the online course and utilization for teaching and learning. Afterwards, questions in questionnaire were taken from the existing TAM publications

and given to the students at the end of the semester to obtain their feedback on the online course. The instrument used in this study was a questionnaire survey that consists of two sections. The first section was to obtain the demographic information of the students while the second section comprised 26 questions to assess the variables of TAM proposed. The questionnaire can be found in Table 1. All the question items were adapted from previous studies. The items of perceived usefulness, perceived ease of use, and experience were adapted from Ching-Ter et al. [19] Sánchez and Hueros [47]. E-learning system quality and interactive learning activities were adapted from Liaw [34]. Perceived self-efficacy was adapted from Ching-Ter et al. [19]. Intention to use the e-learning system was adapted from Liaw [34] Ching-Ter et al. [19]. Subjective norm was adapted from Ching-Ter et al. [19]. All these variables were measured on a five-point Likert scale ranging from 1 “strongly disagree” to 5 “strongly agree”. The targeted group of the sample was taken from the first-year students of the Chemical Engineering Programme degree course, of the Faculty of Engineering and Built Environment, Universiti Kebangsaan Malaysia (The National University of Malaysia). The course that was offered in Open Learning was “Vector Calculus for Technical Course Students”, aligned with the compulsory vector calculus course that the students were taking at the same time. The questionnaire was distributed to the students at the end of the semester of the academic year 2017 through Google Form. Of the 82 students, only 54 answered the questionnaire, for an overall response rate of 66%.

For data analysis, the reliability, convergent validity and discriminant validity for each question and variables developed in this study were calculated. The convergent validity of a question is considered acceptable if the associated loading is higher than 0.505 [57]. Convergent validity can be measured using correlation coefficients. To evaluate the internal coherence of all the questions in relationship to the variables, the Cronbach’s alpha coefficient and the composite reliabilities coefficient were utilised [58, 59]. The range of both indicators were from 0 (no similarities) to 1 (maximum similarities). The minimum acceptable limit for composite reliabilities was 0.70 [60]. The interpretation of Cronbach’s alpha coefficient was divided into four categories: excellent reliability (>0.90); high reliability (0.70-0.90); moderate reliability (0.50-0.70) and low reliability (<0.50) [61]. The convergent validity of the variables was measured by the Average Variance Extracted (AVE), where the acceptable threshold should be higher than 0.50 [62]. Also, the AVE square root was calculated to determine the discriminant validity among the variables. The AVE square root of the variable with the higher value as compared to its correlation values with other variables indicates a good discriminant validity.

Afterwards, the factor structure matrix of loadings and cross-loadings of the questions were analysed to complete the convergent and discriminant validation. Questions with distinctly higher factor loadings on a single variable means those questions fall under that particular variable. Lastly, the proposed structural model (hypotheses) was tested via Partial Least Square (PLS) analysis where it measured the relationships among all the proposed variables. To be specific, the strength of each predictor in explaining endogenous variables was measured using f-squared statistic. A hypothesis is rejected if the f-squared value is less than 0.02 [63, 64].

4. Results

The loading for each question (item) is shown in Table 1. As the loading of all questions comply with the convergent validity conditions. The reliability of the variables is represented by Cronbach’s alpha coefficient and composite reliabilities

coefficient, where both are tabulated in Table 2. Since both coefficients were all above 0.70, this indicates that the data are internally coherent and recommended for confirmatory research. Similarly, the AVE values of all variables as presented in Table 2 are higher than 0.50, leading to the conclusion they have convergent validity.

Table 1. Items loading for the questionnaire developed in this study.

Variables	Items	Loading
Perceived self-efficacy (PSE)	PSE1. I can access the contents of the online course	0.958
	PSE2. I can freely navigate the contents of the online course.	0.956
Experience (EX)	EX1. I enjoy using computers.	0.943
	EX2. I am comfortable using the internet.	0.912
	EX3. I am comfortable saving and locating files.	0.936
Subjective norm (SN)	SN1. People who influence my behaviour would think that I should use the online course.	0.948
	SN2. People who are important to me would think that I should use Online course.	0.959
Online system quality (OSQ)	OSQ1. I am satisfied with using online course as a learning assisted tool.	0.897
	OSQ2. I am satisfied with learning contents.	0.836
	OSQ3. I am satisfied with online course interaction.	0.921
Interactive learning activities (ILA)	ILA1. I would like to share my online course experience.	0.843
	ILA2. I believe online course can assist lecturer-student interaction.	0.930
	ILA3. I believe online course can assist student-student interaction.	0.900
Perceived ease of use (PEU)	PEU1. It is easy to get materials from the online course.	0.836
	PEU2. The process of using the Open Learning system is clear and understandable.	0.884
	PEU3. Interacting with the Open Learning system does not require a lot of mental effort.	0.830
	PEU4. I would find it easy to get the Open Learning to do what I want it to do.	0.892
Perceived usefulness (PU)	PU1. Online course gives me more control over my learning.	0.792
	PU2. Online course contents are informative.	0.917
	PU3. Online course is a useful learning tool.	0.837
	PU4. Online course contents are useful.	0.780
	PU5. Using the online course would allow me to accomplish learning tasks more quickly.	0.860
	PU6. Using the online course would improve my learning performance.	0.890
	PU7. Using the online course would enhance my effectiveness in learning.	0.774
Intention to use (IU)	IU1. I intend to use online course content to assist my learning.	0.941
	IU2. I intend to use online course as an autonomous learning tool (learn at my own pace).	0.935

Table 2. Convergent and discriminate validity values.

Variables	Cronbach's alpha	Composite reliability	AVE
PSE	0.908	0.956	0.916
EX	0.922	0.951	0.865
SN	0.901	0.952	0.909
OSQ	0.907	0.941	0.843
ILA	0.870	0.921	0.795
PEU	0.883	0.92	0.741
PU	0.928	0.942	0.701
IU	0.864	0.936	0.880

The square roots of AVE for the variables were well above the values for correlation between the variables (not shown in the manuscript). Hence, it can be said that the validity of the variables is adequately discriminated. Also, the calculated loading values (not shown in the manuscript) show that the questions that measure the same variables possess prominently and distinctly higher factor loadings as compared to the values that measure other variables. This is an indication of the convergent and discriminate validity of the questionnaire or model developed for this study. The results of SEM analysis are illustrated in Fig. 1 and summarised in Table 3. Since the R-squared of all variables (PEU at 0.732, PU at 0.820, and IU at 0.708) are higher than 0.100, it can be concluded that the predictive capability of the proposed model is satisfactory [57]. Also, the acceptance and rejection of the research hypotheses are shown in Table 3. The f-squared value measures the strength of each predictor variable proposed in this study. According to Henseler et al. [64] Ismail and Mohammed [65], f-squared value can be interpreted as no effect (<0.02), weak effect (0.02 – 0.15), moderate effect (0.15 – 0.35), and substantial effect (>0.35). Based on this interpretation boundary, it was found hypotheses H7 and H13 were not supported. It shows that the external factor (experience and interactive learning activities) did not influence the perception of students on whether the online learning platform is useful or not. The rest the hypotheses were supported with varying degree of effects. Hypotheses H1 and H10 were found to have a substantial effect on the proposed model. It indicates that perceived usefulness has a great influence on the students' tendency to use the Open Learning course and the quality of the online course (contents) significantly affects their perceived ease of use of the online course. Other hypotheses were shown to have weak to moderate effects on the perceived ease of use and perceived usefulness of the online course.

Table 3. Summary of test results for the structural model.

Hypothesis	Path	Path coefficient	f-squared	Supported?	Variable	R-squared
H1	PU → IU	0.645	0.418	Yes, substantial	Perceived Usefulness (PU)	0.820
H2	PEU → IU	0.223	0.05	Yes, weak	Perceived Ease of Use (PEU)	0.732
H3	PEU → PU	0.324	0.152	Yes, moderate	Intention to Use (IU)	0.708
H4	SN → PEU	0.337	0.178	Yes, moderate		
H5	SN → PU	0.085	0.024	Yes, weak		
H6	EX → PEU	0.299	0.125	Yes, weak		
H7	EX → PU	0.081	0.018	No		
H8	PSE → PEU	0.133	0.028	Yes, weak		
H9	PSE → PU	0.204	0.088	Yes, weak		
H10	OSQ → PEU	-0.074	0.413	Yes, substantial		
H11	OSQ → PU	0.053	0.169	Yes, moderate		
H12	ILA → PEU	0.518	0.024	Yes, moderate		
H13	ILA → PU	0.263	0.007	No		

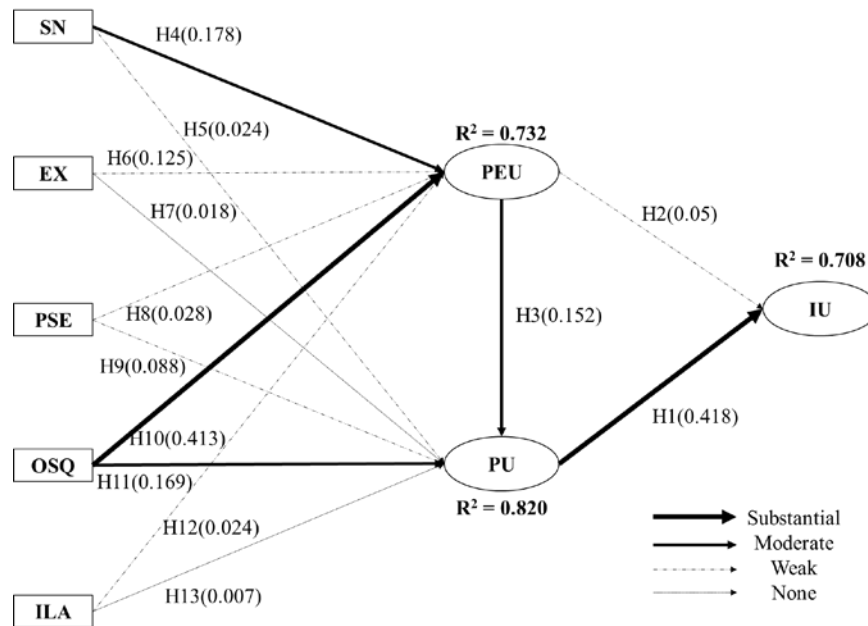


Fig. 1. Results of the proposed structural model.

5. Discussion.

According to TAM theory, there should be a significant positive relationship between perceived ease of use and perceived usefulness. The SEM analysis shows that this relationship is present, albeit with moderate correlation. The strong influence of perceived ease of use on perceived usefulness is not observed. One possible explanation could be that the technical course students are already familiar with various types of social media platforms, which to a certain extent are similar to the Open Learning platform. As reported by Escobr-Rodriguez and Monge-Lozano [41], since the students already have experience in using a similar platform, their concerns about the ease of use of similar technology may not be so intense. They claimed that only inexperienced users (first time exposed to new technology) will focus first on ease of use, instead of the usefulness of the new technology.

Of the two core variables of TAM, only perceived usefulness has a significant effect on the intention to use the Open Learning course. This indicates that students are more likely to use the online course they see it as useful and helpful for their study. Such correlation is generally found in other studies too [41]. In contrast, perceived ease of use has a weak effect on the intention to use the online course. As this batch of students are digital natives, they are already familiar with the function of various social media platforms. Hence, whether the platform is easy to use does not have much effect on their intention to use it. Nonetheless, perceived usefulness acts as the key element that links the perceived ease of use to intention to use.

It was found that subjective norm has no significant influence on perceived usefulness but the moderate effect on perceived usefulness. In this context, it can be interpreted that if the students perceive that influential person (e.g., lecturer) thinks that they should use the e-learning system, they will perceive the system to be useful and simple to use. Since the Open Learning platform is similar to other existing social

media platforms, the students might accept this perception that it is easy to use. However, for them to agree with whether the e-learning system is useful or not, advice from an influential person might not be sufficient. Similarly, experience also recorded weak to moderate effect on perceived usefulness and perceived ease of use. It is undeniable that the students already possess the basic skills in using computer or electronic gadgets and hence this external factor does not have much influence on their perception of the usefulness and ease of use of Open Learning. Perceived self-efficacy also has a weak connection with the two core variables of TAM. This could be due to the reasons that they are similar with the social media platform and have no problem in accessing and navigating the Open Learning course.

Interestingly, online system quality, which refers to the accessibility and quality of the course content, appears to be the most significant external factor that influences the students' perceived ease of use and perceived usefulness. The great flexibility of accessing the e-learning content anytime and anywhere is one of the features that the students like the most (feedback obtained from students). Furthermore, the technical course students also responded that the e-learning platform helps them in their study, as they can refer back to the materials (notes and videos) in the online course for learning and revision. All these features led to the great influence of online system quality on perceived usefulness and perceived ease of use. On the other hand, interactive learning activities did not have a great influence over the two core variables in this study. It can be explained that since this online course was run parallel with the traditional lecture, students might prefer to have face-to-face physical interaction with their peers and lecturers.

Overall, this study shows that the students' intention to use and accept the Open Learning platform for e-learning is significantly influenced by the online system quality. The accessibility and quality of the online course will shape their perception towards the ease of use and usefulness of the course. Thus, the significant lesson from this study is that educators should design the online course in such a way that the content will facilitate ease of use and can encourage the students to actively participate in online learning. One concern that educators should focus is the integration of online learning in education must be designed carefully such that the either of the learning domains (cognitive, affective and psychology) would not be compromised with the incorporation of online learning. Promoting the incorporation of online learning in education will definitely benefit the technical course students. On top of the cognitive and technical skills learnt in the conventional classroom-based courses, participating in online course will grant the students additional skills such as lifelong learning and communication [65]. These competencies will definitely help them in getting better chance of employment after graduation.

6. Conclusion

The proposed conceptual model successfully investigated the acceptance of Open Learning platform for e-learning and identified the factors influencing the technical course students' intention to use it. It was discovered that the accessibility and quality of the online system was the main factor affecting the students' perceived usefulness and perceived ease of use of the online course. Hence, the educator should pay attention in designing the online course content, utilising the functions available in Open Learning platform, such that the course will attract the participation and receive acceptance by the students. Active enrolment in e-learning

course will help to nurture the technical course students to possess the skills necessary for lifelong learning, enhancing their employability and preparing them to be more competitive and successful in the future world of 4IR. Future research should explore other variables that might affect the acceptance of the e-learning system. This may include the learning support from the educators and peers as well as the learning preferences. Also, the digital footprint left by the students using the online course can be acquired for learning analytics study. These data can be used for understanding the learning pattern of the students and thus can help to improve the content of the online course. Increased involvement in online learning will help the learners to build up the experience and confidence in e-learning and subsequently enables them to acquire the skills for lifelong learning.

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