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Abstract

In March 2020, WHO had declared the world is facing a pandemic with little to know it would last 18 months later. Since then, higher institutions practiced remote learning and digitized teaching material to replace traditional methods. In return, this research was conducted to evaluate students' perception towards open and distance learning based on the TAM model. 360 questionnaires were distributed with 100% return rate through google form. There are five elements that measure: students' characteristics, advantages, and disadvantages of Online Distance Learning (ODL), students' perception of ODL, perceived usefulness and perceived ease of use. Findings recorded those hypotheses were accepted and variables are positively related. In conclusion, synergy from both parties (educators and students) play an important role to ensure the success of online distance learning. The final goal of ODL is to make certain education flexible and reach out, thus it needs creativity, empathy, and effort from the stakeholders. With multiple benefits granted by the government plus with the positive perception from both parties, none should leave behind either in technology competency as well psychological wellbeing and the transfer of knowledge.

Keywords: Perceived Ease of Use, Perceived Usefulness, Perception, Acceptance, Online Learning

Introduction

The World nowadays needs to adapt to a new norm due to the Covid-19 pandemic which has started to hit the world starting December 2019. The first infection of the virus came from Huanan Seafood Market in Wuhan, China and it continues to spread all over the world to this day. Movement Control Order (MCO) had been announced all over the world to control the pandemic from spreading further. Malaysia also is no exception where the MCO has been announced on 18 March 2020. The magnitude effects of the virus have been catastrophic; one of the effects is the school closures from the playground to Higher Education Institutions (Sukendro et al., 2020). Although we knew the most prominent way of teaching and learning was face to face, due to this pandemic, we must change our norm and the best way is by online learning. Nambiar (2020) stated that in the wake of the current Covid-19 pandemic

situation conduction of online classes at the college and university level has been made mandatory by the educational boards. Shahzad et al (2020) stated that to tackle the COVID-19 pandemic, almost all the world, including the Malaysian Higher Education Ministry, has issued the order to close the public school and higher education closure as an emergency measure to stop spreading the infection. Due to this MCO, the Malaysian Ministry of Higher Education urged all the higher education institutions to conduct the lecture by using online learning.

University Technology MARA (UiTM) has started the first open and distance learning (ODL) session on 13 April 2020. ODL which has the same concept as online learning is referred to as education and training in which using the learning resources, rather than attending classroom sessions, is the central feature of the learning experience (Commonwealth of Learning, 2003). The lecture class is conducted either two-way communication by using applications such as Google Meet, Zoom, and Webex or a combination of one-way and two-way communication by using a medium such as Whatsapp, Telegram, and Google Classroom. This short notice of ODL implementation provoked various reactions from both lecturers and students. Students are not only expected to be mentally ready for ODL but also to set up the technologies at home and learn ways to adapt to these online learning platforms (Mazlan et.al., 2020). When students perceived that course were supportive of their learning, they were more likely to be satisfied with the online course (Lee et al., 2011). The study also found that, although the perception of students' support was not directly associated with their final scores, the students' course satisfaction was related to their final scores.

The success of e-learning depends on many factors, including accessibility, usage of appropriate methods, course content, and assessment criteria (Baczek et al., 2020). ODL has many advantages and disadvantages, and it differs from one student to another. Besides the epidemiological benefits of e-learning during the COVID-19 pandemic (Baczek et al., 2020), other advantages include easy to access online materials, learning from own home, freedom in choosing teaching materials, possibility of repetition, if necessary, lower cost of studying, and everything in the same place (Astani et al., 2010). Besides, ODL also has disadvantages such as no direct communication with lecturers and among classmates, loneliness, and depression, costs of the internet, and working long hours on the computers can be harmful (Astani et al., 2010).

Wang & Zhao (2020) in their research stated that university students had higher anxiety than the general population after the outbreak of Covid-19. While Kemp & Grieve (2014) based on their findings, no clear differences in online academic performance compared with in-class learning, but students had a general preference for in-class activities, specifically when discussion of academic topics was required. ODL has many advantages and disadvantages. Some of the students were fully mentally prepared for ODL but some of them did not fully accept the ODL due to their problems based on current circumstances. At the same time students have not experienced the full process of learning because the classroom only appeared in digital form. Furthermore, some students shared that they are struggling with limited devices and some limited Internet connection issues for study purposes. Due to this reason, it is crucial to determine the students' acceptance by using the Technology Acceptance Model (TAM) (Davis, 1989) of any new technology application. The two determinants of user acceptance by TAM are perceived usefulness (PU) and perceived ease

of use (PEU). In TAM, PU refers to the degree to which the user believes that using technology will improve his or her work performance, while PEU refers to how effortless he or she perceives using the technology will be (Masrom, 2007). Both are considered as determinant factors for students' perception and PEU itself will be the determinant factor for PU.

Therefore, the objectives of this study are:

- To identify the relationship between UiTM Melaka student's perceived ease of use (PEU) and perceived usefulness (PU) with perception.
- To examine the PU influence towards UiTM students PEU with ODL.

Literature Review

Open and Distance Learning (ODL) in UiTM

Online learning is defined as learning experiences in synchronous or asynchronous environments using different devices such as mobile phones, laptops, and personal computers (PC) with internet access (Shivangi, 2020). The synchronous learning environment is real-time structured in the sense that students attend live meeting lectures such as Google Meet (GM), Webex, and Zoom. With this learning environment, the students have real-time interaction (two-way communications) with their instructors. While asynchronous learning environments, learning content is not available in the form of live meeting lectures and more to one-way communication such as video and sound recording that will be uploaded in Google Classroom (GC), WhatsApp, and Telegram. The method of interaction and preparation also must be changed. In face-to-face classes, the instructors need to prepare the materials and conduct the class in front of the students but in an online learning manner, the teacher will upload or share the materials online and both sides will face-to-screen to interact. It is influenced by technology used in the way of communication. The most obvious difference between online learning and face to face learning can be seen in communication methods (Pozgaj & Knezevic, 2014).

In UiTM, we use ODL which has the same concept as online learning. Tech Target Contributor (2005) defined ODL as a general term for the use of telecommunication to provide or enhance learning. Around the world, the academic community is discovering and exploring the Internet, teleconferencing, and related means to achieve an extended classroom or learning experience. UiTM itself has its online learning platform called Ufuture where lecturers and students can engage together. This platform is an example of an asynchronous learning environment. Online education models require teachers to interact (communication) with their students synchronously or asynchronously (Nugroho et al., 2020). Teaching material compiled by teachers (teacher-content) is material that is tailored to the characteristics of the internet in the network, such as the use of search engines (search and retrieval), uploading video tutorials (tutorials), making simulations or online games (simulations and games), the creation of virtual labs, and the use of electronic books (e-books) and these materials will be obtained by students in their online education (student-content) (Nugroho et al., 2020).

Factors of Online Learning

Fourth Industrial Revolution also known as Industry 4.0 (IR 4.0) has influenced the interconnectivity, automation, machine learning, and real-time data. IR 4.0, also sometimes referred to as Internet of Thing (IIoT), is smart manufacturing, physical production and

operations controlled by smart digital technology, machine learning, and big data to initiate a more holistic and better-connected environment for organizations (Zafir et al., 2018). It had a huge impact on the nature of work. The widespread use of digital technologies in everyday life, especially in work, indirectly influences the methods of teaching and learning in educational institutions.

Transformation in accessing information and knowledge through various Internet mediums have impacted the nature of work. Digital skills are becoming crucial to living in the digital environment (Moller et al., 2012). The use of digital technology is one of these strategies to ensure that teachers can plan teaching and learning sessions better and more efficiently. The results of the study by Lubis et al (2019) found that the innovation of the education system and teaching strategies is very necessary in teaching Arabic, especially to students who are non-native speakers of Arabic to master the Arabic language in the era of globalization. It can facilitate teachers and students to communicate in teaching and learning sessions.

Additionally, the entire world faced the pandemic Covid-19 and the need for people to stay at home led the education system to shift dramatically to the online mode (De' et al., 2020). The educational institutions around the world have transformed the face to face class to an online method using video conferencing mediums like Google Meet, Webex and Zoom. Shah (2020) determined that other than using synchronous methods, asynchronous mediums like edX and Coursera have also seen a rise in enrolments. Most of the education institutions are now transforming entirely to the online learning method in the forthcoming academic year, except sessions which require physical practice (New York Times, 2020).

Recently, generation Z and Millennial are getting more in the world's population. They are the ones who will lead the country in the future and are responsible for the construction of IR 4.0. Their interests are more focused on computer technology and internet browsing technology of this group which is in communication. For example generation Z also stimulates internet generation, digital generation, media generation and generation.com (Levickaite, 2010). They are more comfortable and enjoy learning digitally and more familiar with the technology.

Students' Perception on ODL

Rakhmanina et al (2020) defined perception as the object, occurrence, and relationship experience developed by continuing and translating message knowledge. Practically, an individual's experience shapes his or her perception. Establishing perception as a holistic process of action that helps an individual adapt his or her behavior to the living environment (Michotte, 2019; Septinawati et al., 2020; Rakhmanina et al., 2020).

Pallof et al (2001) in research by Marzie et al (2010) found that there is no significant difference in the learning outcomes of students in online and face to face methods. This finding acquired in many research studies has been conducted assessing the two delivery methods, online and face-to-face settings. This is parallel with Fortune et al (2011) finding that no statistically significant difference in learning preference was found between these two methods of learning. However, Bali & Liu (2018) in their research found that face-to-face learning led to more positive perceptions compared to online learning.

Nugroho et al (2020) in their study on translation course students' perception of online learning found that 80% of students did not feel comfortable doing online lectures and did not want this online course to continue going forward. Yet, they found out the use of various teaching applications still gets a very positive perception from students. In another study conducted by Nambiar (2020) looking for students' perception among universities across India, 87.1% of students reported that they preferred face-to-face class rather than online because of the technical issues that always occurred during an online class.

However, when it came to the positive aspect of online classes, the majority found it to be time saving and don't have to rush to reach class (Nambiar, 2020). Rakhmanina et al (2020) in their research on students' perception of online English learning reveals that most students were actively engaged in online learning but at the same time, they were burdened by all lecturer tasks. Investigation on students' perceptions of online learning based on experience had been conducted by Astani et al (2018) showed that those students who had not familiar with online learning were unclear about online system features and uncertain with the expected outcome while the students who had familiar with the system were satisfied with the online course, and they would suggest an online course to others. These findings are also supported by study of Markova et al (2017) that determine a relatively high students' satisfaction with their distance learning. However, there are challenges in the ways in which students assess their distance learning effectiveness which decrease in their satisfaction with online learning experience influenced by low self-organization, lack of instructor's control, lack of effective communication and sense of isolation.

Technology Acceptance Model (TAM)

The aim of our analysis is students' perception toward ODL and their general acceptance of online learning. Therefore, Technology acceptance models will be used to understand the computer acceptance elements among users (Teran-Guerrero, 2019). TAM Model was introduced by Davis (1989) is to be used in determining students acceptance of any information technology system and to analyse two factors: perceived usefulness (PU) and perceived ease of use (PEU) in identifying design problems before students use the system (Chen et al., 2007) in Farahat, 2012). While Masrom (2007) stated that the technology acceptance model (TAM) suggests that perceived ease of use and perceived usefulness forecast usage of application.

Davis (1989) in Teo (2010) stated that both PU and PEU jointly affect attitude towards usage, while PEU has influence on PU. The TAM is a basic model by integrating several factors that allow attitudes of using E-learning can be studied in addition to identifying the intention behavior to use it (Al Kurdi et al., 2020).

Study of acceptance commonly analyse a comparison between general acceptance or attitude acceptance toward online learning and virtual media, and behavioural acceptance. It will be shown through actual practical use of online devices (El Mouldi & Mouelhi, 2017). The success of use or participation in e-learning tends to be highly dependent on the positive attitude of the students towards the strategy found through the study. Online learning devices are easy to use and benefit the user, leading to positive perception and indirectly creating users' positive attitude (Yuen & Ma, 2008). Acceptance of attitudes from the users supports acceptance of his or her behaviour which is shown in actual long-term use.

While behavioral intention is how a student designs a conscious plan whether to use online learning -related activities or not (Clement & Bush, 2011). It is achieved if online learning devices and methods are useful to them in teaching and learning activities.

Perceived Usefulness (PU)

According to Davis (1989) in explaining his TAM model, defined PU as the extent to which a person believes that his or her work performance will increase when using a particular system. PU is also defined as a subjective probability an improvement in user work performance will occur when using certain application systems in an organizational context. This is the basic determinant of intent and, therefore, the user's acceptance behavior of the application system (Yuen & Ma, 2008). This means the decision of the user on whether to accept or reject the technology influenced by PU (Davis, 1986). Therefore, technology and online learning tools characteristic that used for ODL must be considered by universities to ensure the students can face ODL positively.

Perceived Ease of Use (PEU)

PEU was defined as to the extent to which individuals believe that using a particular system will be effortless (Davis, 1989). Yuen & Ma (2008) also explained that PEU as the degree to which the prospective user believed the target system would not be complicated. PU was influenced by PEU that explained that both the PU and the user's attitude were predictors of intention to use (Chang et al., 2017). Several previous studies showed that the PEU has a positive relationship with the behavioural intention (BI) to use (Tarhini et al., 2017) e-learning tools. PEU led the students to perceive that the application of e-learning tools is effortless and would be easy to use. This can be concluded that TAM determinants are the major factors impacting the adoption of the technology.

Relationship between Perceived Ease of Use (PEU) and Perceived Usefulness (PU)

Until now, there's no research purposely conducted to determine the relationship between perceptions with PEU and PU. Most of the researchers did research based on student's intention and acceptance towards online learning and related it with PEU and PU. Farahat (2012) in his research investigated the determinants of students' acceptance of online learning can influence students' intention (SI) to use online learning revealed positive and significant relationships between all research variables which are SI and PU ($r=0.369$, $P<0.01$), SI and PEU ($r=0.410$, $P<0.01$), and PU and PEU ($r=0.581$, $P<0.01$). Masron (2007) did research on technology acceptance and e-learning and found that both PEU and PU have a significant impact on attitude toward using. The result also showed that PU had a significant effect on intention to use with $p<0.001$ and it was consistent with prior research conducted by Davis (1989); Hu et. al (1999); Mazlan et al (2020) in his research found that there is a positive and strong relationship between technology acceptance and student understanding ($r=0.613$, $p<0.01$). Rakhmanina (2020) revealing the result of the engagement of students, the data discovers that most students were actively involved in online learning. Masron (2007), perceived ease of use had a significant impact on perceived usefulness ($\beta = .749$; $p < 0.001$) and perceived usefulness had a significant effect on intention to use, with $p < 0.001$.

Theoretical Framework

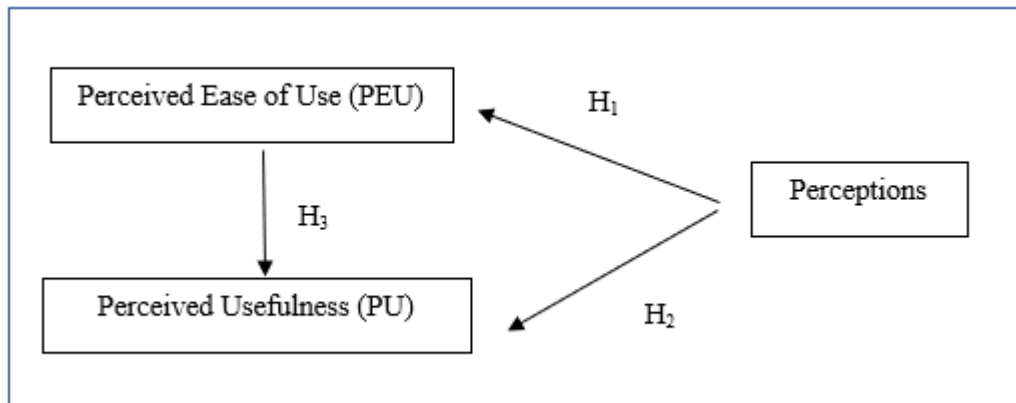


Figure 1: Research Theoretical Framework based on Technology Acceptance Model (TAM)

The research hypothesis based on the diagram of TAM model in the context of ODL learning are:

H₁: The UiTM student's PEU has a positive relationship with the student's perception.

H₂: The UiTM student's PU has a positive relationship with the student's perception.

H₃: UiTM student's PEU positively influences their PU of ODL.

Methodology

To test these hypotheses, we collected questionnaires from students enrolled in diploma in the academic year of 2020–2021 in the Faculty of Business Management (FBM), UiTM Melaka branch, Alor Gajah campus. The population was selected as a context for this study based on several reasons. These students faced ODL because of the Covid-19 pandemic. Additionally, these students are the earliest group to have to face the ODL and this is appropriate to study their acceptance of this system due to the sudden change from face-to-face learning system to ODL system. The respondents of this study are the students from three different programs in FBM, UiTM Melaka branch, Alor Gajah campus. A total of 360 total questionnaires were distributed and all managed to be returned.

The questionnaire of this study consists of five constructs: students characteristics, advantages, and disadvantages of ODL, students' perception on ODL (Nambiar, 2020), perceived usefulness and perceived ease of use. Technology Acceptance Model (TAM) are used to identify students' acceptance towards ODL designed by (Davis, 1989). All items were measured on a five-point Likert Scale ranging from 1 "Strongly Disagree to 5 "Strongly Agree". The questionnaire results were analysed using Statistical Package for Social Science (SPSS).

The Table 1 below showed the gender details of UiTM Melaka students as a research respondent. From 360 responses received, 82.5% of them are female which means 298 respondents. While the other 62 students which was 17.2% from the total respondent were male.

| Gender | Frequency | Percent |
|--------|-----------|---------|
| Male | 62 | 17.2 |
| Female | 298 | 82.5 |
| Total | 360 | 100 |

Table 1: Gender of Respondents

The other demographic sections in the questionnaire asked about the student's interest in Online Distance Learning (ODL). From the findings in Table 2, 64% from total respondents which means 230 students were interested in ODL hence the other 130 respondents (36%) stated that they are not interested in ODL. Maybe due to their own reasons such as lack of internet problems, or family matters.

| Gender | Frequency | Percent |
|--------|-----------|---------|
| Yes | 230 | 64 |
| No | 130 | 36 |
| Total | 360 | 100 |

Table 2: Student's Interest in Online Distance Learning (ODL)

Result and Discussion

Result

In order to analyse the relationship between the two determinants of Technology Acceptance Model (TAM) which were perceived ease of use (PEU) and perceived usefulness (PU) with UiTM Melaka student's perception, the correlation analysis was conducted. PEU and PU as independent variables and student's perceptions as a dependent variable. Table 3 below summarized the analysis of correlations between PEU and PU with perception. The dependent variable was the UiTM Melaka student's perception, and the independent variables were PEU and PU. From the findings with PEU ($r = 0.450^{**}$, $p < 0.000$) and PU ($r = 0.469^{**}$, $p < 0.000$) have a positive relationship with UiTM Melaka student's perception. Therefore, both PEU and PU had a moderate relationship with UiTM student's perception and the first and second hypothesis for this research which were "The UiTM student's PEU has a positive relationship with the student's perception" and "The UiTM student's PU has a positive relationship with the student's perception", was supported.

| | Perceived Ease of Use (PEU) | Perceived Usefulness (PU) |
|--------------|-----------------------------|---------------------------|
| Perception R | 0.450 ** | 0.469 ** |
| p - value | 0.000 | 0.000 |
| N | 360 | 360 |

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

Table 3: Correlation between perception with perceived ease of use (PEU) and perceived usefulness (PU).

The analysis of multiple regression in SPSS has been conducted to determine the influence of UiTM students' PEU on their PU of ODL system. PU was a dependent variable and PEU was an independent variable. Table 4 demonstrates the results of multiple regressions for the influence of students' PEU on their PU. From the analysis, it stated that UiTM students PEU was influenced by PU. Conclusion from the findings was if PU of UiTM Melaka students increased by 1%, their PEU would increase by 73.0%. It means that UiTM Melaka students found that the ODL system was easy to use and will give better benefits to them. So, the third hypothesis, "Students' PEU positively influences their PU of online learning", was supported. The findings are consistent with Farahat (2012) that showed the same positive influence of PEU with PU.

| | R square | Adjusted R square | Standardized coefficient β | F | Sig. | t-value |
|------------|----------|-------------------|----------------------------------|---------|-------|---------|
| PEU | 0.533 | 0.531 | 0.730 | 408.177 | 0.000 | 6.045 |

Table 4: Multiple regression results for the influence of students' PEU on their PU

Discussion

From the analysis, UiTM student's perception based on PU is higher than PEU. It showed that most of the UiTM Melaka students believed the ODL system that they must use during this MCO will produce better outcomes for their future exam results, assignments and understanding. They believed that overall, the ODL system is useful to their study, in which students can improve their learning performance, improve their academic achievements, more easily understand the course content, understand the lecture and tutorial tasks more quickly, and it enhances their effectiveness in assignments and tutorials. While PEU showed that the UiTM Melaka students likely believed that the ODL system is practical, convenient and not complicated. ODL systems were easy to adapt, easy for them to use, they became more skilful in IT while using ODL, it was understandable and easy to apply, and it was more flexible than face to face classes.

Reliability Test

Uma Sekaran (2000) stated that, in general, reliabilities less than .60 are considered poor, those in 0.70 ranges are acceptable, and above 0.80 are good. The Cronbach's alpha reliability for the sum of 17- items overall was 0.904. While 0.942 for perception, 0.904 for PU and 0.889 for PEU. This finding proves that all the items in the questionnaire were very reliable.

Conclusion and Recommendation

Conclusion

This research paper aims to evaluate the UiTM's students' perception towards the open and distance learning online academic experience in general by using the TAM's model. The study focuses to explore and understand how the UiTM's students perceived the use of the online technology as their mainstream based on learning interaction experience due to the covid-19 pandemic. The data reflects that most of the students believe that online learning platforms applied during the pandemic are appropriately manageable, and well received as well as provide positive outcomes in their current and future learning and academic achievements. These reactions may indicate the encouraging e-learning advantages experienced by most of

the students such as the ease of accessing the learning materials, attending scheduled classes, having important discussions and or conducting any educational meetings within their own location at their convenient preferences online.

The e-learning approach also provides the sense of health security especially during the pandemic where mutual meetings at public areas are highly discouraged now to refrain from the spread of covid-19 virus among the community. Student's optimism towards the online learning engagement are also seen affected by the student's positive experiences when using the online learning applications which most of them found easy to use and provide all the supporting elements in the learning process. The online learning technology applications or electronic mediums are some of the crucial tools that would give significant impact towards determining the success of achieving the required learning objective both by students and their educators, therefore the importance of having these technology aids to be available and provided to the targeted end user in the friendliest user features are inevitable. The higher flexibility, friendly user interface functionality of an application will be, the higher satisfaction and use in confidence by the end user may be achieved.

Recommendation

In the effort of addressing the research main goals, we had found that intermediate or advance courses which focuses on the use or mastery of the online technologies' platforms, applications, and related features are necessary for future online-tech competencies for both students and their educators so that both of these groups may experience optimal educational information exchange. This is due to the different features which are displayed on the platform itself such as the type of functionality or characteristic available within the respective online platforms application available that differ from one and another, depending on the purpose of use or type of technology verse which some may found it to be quite sophisticated or too complex to use due to lack of exposure, training, or a quite new experience at current for them. Therefore, such intermediate or advanced courses may help them to increase their capabilities when using the respective technology platforms within the educational perspectives.

Students and educators at current had now and will be experiencing the new age of learning approach which most likely to focus on the online distance learning (ODL) method due to the pandemic situation which still in the nation and global concern, therefore, along the demands of learning approach that had shifted considerably, the psychological well-being of both students and educators should also be appropriately managed and aided. Special online consultation may be held to assist and provide the necessary service that would at the same time gather crucial information on the academic progress shown and experienced by both targeted groups. These assessments may also help educational institutions to understand more hence establishing the respective strategic plans for specific continuous improvements. This approach will act as one of the important institutional support systems that will be available to all that in need. The consultation support may be provided in the focus of developing the targeted group technological competency improvement and ensuring the psychological well-being aspect or enhancements focus. It is important to ensure none are left behind either in the technology competency aspect as well as in the psychological well-being aspects.

The research findings may also be explored and expanded by any future researchers in the research matter hence provide another extended outcome and findings that would help us to better understand the level of technology acceptance among students or any targeted groups and how it may impact the learning capability and credibility as well as expected quality outcome within the higher education context.

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