

BEHAVIORAL INTENTION TO USE E-LEARNING: APPLICATION OF TECHNOLOGY ACCEPTANCE MODEL

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ABSTRACT

The outbreak of Covid-19 during third-wave in Myanmar hinders offline learning, and technology infusion and accessibility of several online learning sources urge students to use e-learning. The study aims to investigate the effect of perceived ease of use on perceived usefulness, to test the effects of perceived ease of use and perceived usefulness on attitude toward using e-learning, and to analyze the effect of perceived usefulness and attitude toward using e-learning on behavioral intention to use e-learning. The analysis is based on the primary data which were collected from 74 MBA students who have been attending Nay Pyi Taw Campus, Meiktila University of Economics by using simple random sampling method. They were asked with the semi-structured questionnaire during August 2021. The study was particularly based on technology acceptance model; and descriptive statistics, simple linear regression analysis and multiple linear regression analysis were mainly applied for conducting the analysis. It is found that perceived ease of use reveals the positive and significant effect on perceived usefulness. It is then observed that perceived ease of use and perceived usefulness indicate the positive and significant effects on attitude toward using e-learning. The study highlights the perceived usefulness has the most significant effect on respondent attitude. In addition, perceived usefulness and the attitude toward using e-learning also show the positive and significant effects on behavioral intention to use e-learning. Thus, the results of the study are in line with the assertions of the technology acceptance model. The study figures out the importance of perceived ease of use and perceived usefulness; and these should be the primary concerns for behavioral intention to use e-learning.

Keywords: Perceived usefulness, perceived ease of use, attitude, behavioral intention, e-learning.

INTRODUCTION

The development of information and communication technology persuades people to use electronic devices increasingly and triggers them to initiate information gathering and sharing each other around the world. With the aid of advanced technology, way of communication and knowledge expansion has been changed since they are familiar with the technology and devices today. As the technology infrastructure has been prominently increasing, people can apply technology inexpensively. When they found it useful, their interest in applying technology in their study, workplace or even in their daily lives is risen. Searching information what the world is happening through their mobile phones comes to the habitual action among people. Along with the contribution of advanced technology, they rely much on the acquirement of data and information concerning with dynamic environmental conditions. Widespread use of technology enables people learn from each other through internet at any time.

Learning through online is accelerated during the 21st century due to the speedy acquirement of data and information from a variety of sources within short period of time. Since learners can attain the updated information from different perspectives, they become to realize and appreciate the fruitfulness of online learning. They are able to learn continuously changing situations all over the world by reviewing the data available from several websites, social media, and web applications. The life-long learning is the overwhelming idea which intrudes people's thinking, and hence, the daily emphasis is upon learning nowadays. Information and communication technology is ideally helpful to reach their point in the meantime.

The contributions of e-learning are apparent in higher education institutions in scholarly literature. Previously, master students have to search much data and information from both library and online resources so that their comprehension on course works is high enough. The intense use of internet through different devices stimulates students to search their interested study area. They can also obtain knowledge by observing the real situation from learning case studies and relevant web pages. International universities have been using technology for information sharing internally and externally for many years ago. In addition, they have been motivating their stakeholders to access the information through using technology in the education sector. In Myanmar, public and private universities have commenced utilization of technology and encouraged students to do e-learning while they were doing face-to-face teaching.

The outbreak of Covid-19 however disrupts the operations of universities in Myanmar and it is impossible for them to operate normally. In this context, the students have difficulties to use offline learning and thus they must have done e-learning. As Master of Business Administration (MBA) students are in different technical backgrounds, their perception on e-learning is likely to be different. Their behavioral intention to access virtual learning atmosphere is of great concern for Meiktila University of Economics so that e-learning system can effectively be implemented. Their readiness to use e-learning is critical for implementing e-learning programs which are designed by the university. Thus, their behavioral intention is the focal point to be considered by an educational institution in higher education. The objectives of the study are to investigate the effect of perceived ease of use on perceived usefulness, to test the effects of perceived ease of use and perceived usefulness on attitude toward using e-learning, and to analyze the effects of perceived usefulness and attitude toward using e-learning on behavioral intention to use e-learning.

SCOPE AND METHOD OF THE STUDY

The primary focus of the study is behavioral intention to use e-learning by using technology acceptance model. Specifically, perceived usefulness and perceived ease of use are investigated and their effects on attitude toward using e-learning and behavioral intention are examined as well. To do the analysis, the primary data was collected from 74 MBA students who have been attending

Nay Pyi Taw Campus, Meiktila University of Economics. The respondents were asked their perception using semi-structured questionnaire during August 2021.

To collect the primary data from the respondents, the sample was selected with simple random sampling method. There are 81 MBA students who have been attending Nay Pyi Taw Campus, Meiktila University of Economics during the data collection period. The sample represents 91% of total population and the respondents were asked their perception on e-learning. Descriptive statistics was applied for describing the mean values and standard deviation of each variable which was involved in the conceptual framework. Reliability test, validity test, and correlation analysis were conducted before continuing analysis. Simple linear regression analysis and multiple regression analysis were particularly used in this study and the analysis was based on the technology acceptance model.

LITERATURE REVIEW

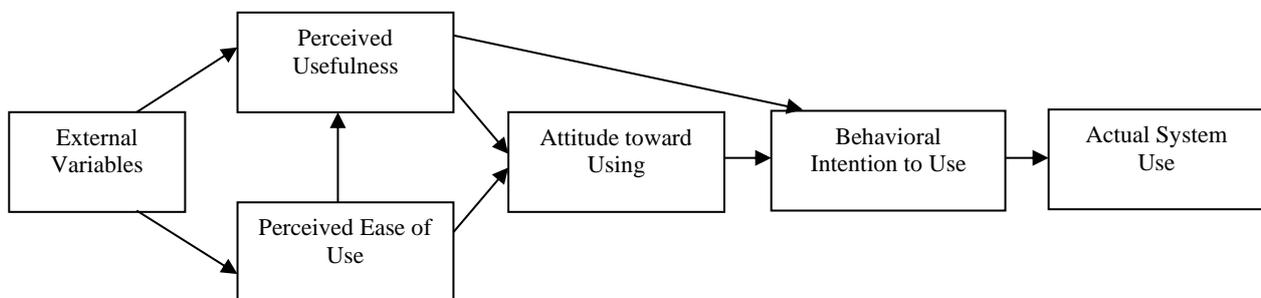
Research interest on e-learning in universities has been on-going for more than two decades (Ellis et al., 2009) and empirical studies were based on different conceptual models and frameworks according to the relevant study scope. E-learning is the application of digital technology to acquire learning experiences (Babu & Sridevi, 2018). The study on e-learning in educational institutions was being increasingly admired by scholars (Njenga & Fourie, 2010). The courses, which rely completely online, has been designed and increasingly raised in higher education during the past decade (Tham & Werner, 2005). The major reasons for using e-learning were efficiency, effectiveness, engagement, satisfaction, and motivation of students and management is responsible for creating such kind of attributes (Urh et al., 2015).

E-learning has been used as an educational tool and has been enhanced so that the needs of individual learners and instructors are met satisfactorily (El-Seoud et al., 2014). It is also a medium for providing training and knowledge, and new paradigm in modern education (Aziz et al., 2019). E-learning in higher education is crucial for students and education for sustainable development effectiveness (Azeiteiro et al., 2015). Along with the full utilization of interactive technology, universities design their courses to enable more student-centered learning (Aoki, 2010). Unless e-learning is perceived as being convenient and useful by the students, they will not be willing to accept it (Rezaei et al., 2008).

TECHNOLOGY ACCEPTANCE MODEL

The analysis concerning with e-learning acceptance is based on the original version of technology acceptance model but is extended with further predicted variables (Kurdi et al., 2020). Two specific variables: perceived usefulness and perceived ease of use are put into the conceptual framework as the principal determinants of user acceptance of information technology (Davis, 1989). Park (2009) recommended technology acceptance model as an excellent theoretical tool to conduct analysis on user acceptance of e-learning. The extended technology acceptance model was developed by adding constructs such as personal, social, behavioral, and technological factors according to the study focus in order to understand the relevant conditions (Tarhini et al., 2016). In different line of studies, each analysis was based on the original version of technology acceptance model as depicted in Figure (1).

Figure 1: Original Technology Acceptance Model



Source: Davis (1989)

The original technology acceptance model propose that external variables are considered as antecedents of perceived usefulness and perceived ease of use; perceived ease of use is viewed to have effect on perceived usefulness; perceived usefulness and perceived ease of use are assumed to have influence on attitude toward using technology; perceived usefulness is proposed to have the direct effect on behavioral intention to use; attitude toward using technology is presumed to have effect on behavioral intention to use; and finally behavioral intention to use is thought to have effect on actual system use (Masrom, 2007).

PERCEIVED USEFULNESS

Perceived usefulness is defined as the belief of improving performance with the use of technology and it is measured with enhancing effectiveness, improving course performance, increasing productivity in course work, and ease of finding information (Masrom, 2007). Although online learning has some drawbacks, it provides tremendous advantages (Al-Azawei, 2017). Perceived usefulness is considered to be positively related to students' intention to use e-learning in accordance with the technology acceptance model (Rezaei et al., 2008). It is one of the strongest and most important predictors in the intention of university students to use e-learning systems (Kurdi et al., 2020).

PERCEIVED EASE OF USE

Perceived ease of use refers to user perception on effortless of using technology and it is measured with ease, clarification, and understandability (Masrom, 2007). Perceived ease of use is found as one of the strongest and most important predictors in the intention of university students to use e-learning (Kurdi et al., 2020) and it is also a predictor of perceived usefulness (Davis, 1989). Easiness is influential factor for decision to use e-learning at state universities as well (Mbengo, 2014).

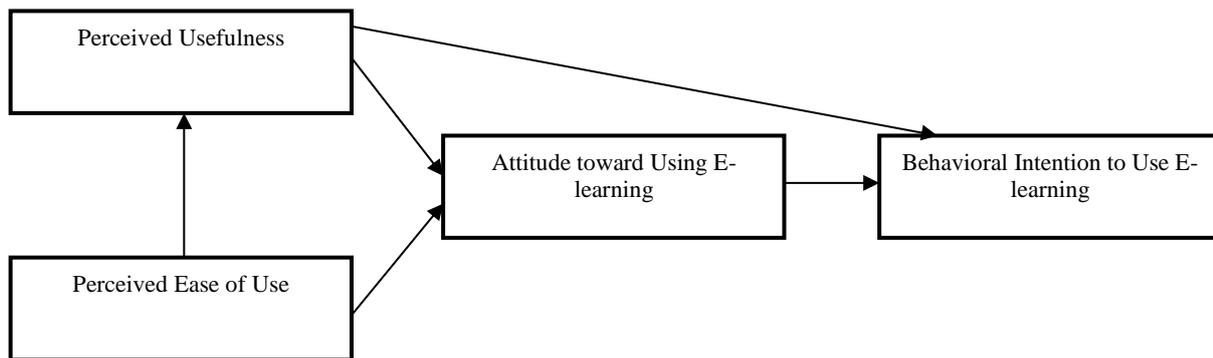
ATTITUDE TOWARD USING

Triandis (1971) defined “attitude as individual characteristics which portrays either positive or negative behavior and reflection of feeling and knowledge to certain concept or subject”. Attitude refers to “an individual’s overall affective reaction” and its influence on intention to use e-learning is significant (Mbengo, 2014). It was observed that perceived usefulness and perceived ease of use determine the attitude toward using e-learning (Masrom, 2007) and attitude is a predictor of intention to use technology (Hussein et al., 2017). Likewise, attitude of university students plays a crucial role in contributing the intention to use e-learning (Hussein, 2017).

BAHAVIORAL INTENTION

The measurement of behavioral intention to use includes regular use in the forthcoming time, potential use of contents and functions, recommendation to others and regular basis in the future (Salloum et al., 2019). Additionally, times to be used in the future are also included in the measurement of behavioral intention to use e-learning (Masrom, 2007). Intention to use e-learning is commonly used as dependent variable using technology acceptance model in the previous studies (Rezaei et al., 2008; Kurdi et al., 2020; Masrom, 2007).

Figure 2: Conceptual Framework



Source: Adapted from Davis (1989)

Several studies concerning with e-learning of students in higher education by using technology acceptance model can be found in the previous literature. To measure perceived usefulness, effectiveness of learning, enhancement of comprehension, speedy function, flexibility, and desirable benefits are included in the questionnaire. Perceived ease of use is measured with simplification, clarification, understandability, easy search, and accessibility with many devices. Attitude toward using e-learning is measured with preference, activeness, positive sense, appropriateness, and compulsory of using e-learning. Behavioral intention to use e-learning is measured with regular basis in the future quarter, potentiality in using academic activities, possibility of daily use, recommendation to others, and continuous use in the forthcoming time. According to the conceptual framework, the study analyzes the effects of perceived ease of use on perceived usefulness; perceived usefulness and perceived ease of use on attitude toward using e-learning; perceived usefulness on behavioral intention to use e-learning; and attitude toward using e-learning on behavioral intention.

DATA ANALYSIS AND RESULTS

The study comprises perceived usefulness, perceived ease of use, attitude toward using e-learning, and behavioral intention to use e-learning. Firstly, the reliability test reveals items which indicate the inclusions of each variable and Cronbach’s Alpha values which show internal consistency. Each variable is measured with five statements and it shows high internal consistency as the Alpha values of all variables are greater than 0.8 as depicted in Table (1).

In this study, each statement is measured with five-point Likert scale and the respondent perception is asked. The average perception on each variable is calculated and it is shown as overall mean value and the interpretation is based on the assertion of Best (1977). The standard deviation is attached with it to explain how much deviates from the mean values. The standard deviations of all variables are lower than one and thus, it implies that they do not deviate from the mean values. According to Table (1), perceived usefulness indicates the agreement level explaining that the respondents are aware of usefulness for applying e-learning. The respondents can learn what they want to inquire in time by using their portable devices without the requirements of much energy and costs. With the aim of knowledge expansion, they can intentionally carry their devices wherever they go. They are able to accomplish their learning objectives while they are doing routine works which are necessary for their jobs, businesses, or chores.

The mean value of perceived ease of use reveals the agreement level which explains respondent feeling of ease and convenience for using e-learning. As they can access several search engines such as Google, Google Chrome, Yahoo, Firefox, Microsoft edge, Youtube, and social media for information search through mobile phones, laptop, and desktop, they recognize ease of using e-learning. Since programmers develop the applications which are appropriate with their target clients e.g. state-owned and private universities as their teaching and learning platform, the respondents can use them easily. They can also access online courses using Zoom, Google Meet, Google Classroom, Microsoft Team which enable them ease and convenience.

The mean value of attitude toward using e-learning is above the agreement level and it is regarded as positive attitude. Since e-learning enables change in higher education, respondents' positive attitude might contribute to cooperate designing e-learning systems in the university. Starting from the familiar search engines or learning platforms likely to induce respondent's readiness to change from face-to-face learning to e-learning. Most of them are using mobile phones when they search for information as they are being carried wherever they go. Thus, their attitude using e-learning is constructive due to the familiarity and less barriers for doing this.

The mean value of behavioral intention to use e-learning indicates the agreement level and it is interpreted that respondents aspire to use e-learning. As they have been using internet over a long period of time, they might not encounter huge challenges for e-learning. While the students are using offline learning, their teachers motivate them to learn relevant cases and issues through internet previously. Although individual students vary considerably, their behavioral intention can be viewed as high intention to use e-learning.

The correlation between each two-set of variables is examined to make sure there is a correlation between dependent and independent variables before continuing multiple regression analysis.

Table 1: Descriptive Statistics, Correlation, and Reliabilities

Variables	Mean	SD	PU	PE	AE	BI	Alpha	Items
Perceived usefulness (PU)	4.07	0.43	1				0.840	5
Perceived ease of use (PE)	4.08	0.49	0.610***	1			0.854	5
Attitude toward using e-learning (AE)	4.23	0.46	0.701***	0.669***	1		0.838	5
Behavioral intention to use e-learning (BI)	4.16	0.52	0.604***	0.693***	0.627***	1	0.851	5

Note: *** shows statistically significant at 1% level.

Source: Survey Data (August 2021)

As shown in Table (1), the correlation between perceived ease of use and perceived usefulness is positive and significant. It explains the potentiality for the positive effect of perceived ease of use on perceived usefulness. In addition, perceived usefulness and perceived ease of use are positively and significantly correlated with attitude toward using e-learning. It also explains the potentiality for the positive effects of perceived usefulness and perceived ease of use on attitude toward using e-learning. Besides, perceived usefulness is positively and significantly correlated with behavioral intention to use e-learning. It also explains the potentiality for the positive effect of perceived usefulness on behavioral intention. Finally, attitude toward using e-learning is positively and significantly correlated with behavioral intention. It signals the potentiality for the positive effect of attitude toward using e-learning on behavioral intention to use e-learning.

Table 2: Simple Linear Regression Analysis of Perceived Ease of Use and Perceived Usefulness

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
Constant	1.899	0.334			
Perceived ease of use	0.531	0.081	0.610	6.539	0.000
R ²					0.373
F					42.762***

Note: *** is statistically significant at 1% level.

Dependent Variable: Perceived usefulness

Source: Survey Data (August 2021)

The study firstly examines the effect of perceived ease of use on perceived usefulness as shown in above. Perceived ease of use is put an independent variable while perceived usefulness is used as dependent variable in the model. As depicted in Table (2), the R² is 0.373 and the independent variable has explained 37.3% of the variance in the dependent variable of perceived usefulness. The value of F-test, the overall significance to the model, indicates significance at 1 percent level. According to the simple linear regression result, perceived usefulness is 1.899 even if there is no perceived ease of use.

Perceived ease of use indicates positive and significant effect on perceived usefulness at 1 percent level according to Table (2). It explains that one unit increase in perceived ease of use leads to 0.531 unit increase in perceived usefulness. It implies the higher the perceived ease of use, the higher the perceived usefulness. When respondents found using e-learning is easy to

search for information by utilizing resources efficiently, they tend to recognize its benefits. It is important to perceive ease of use for e-learning in order to be aware of usefulness. When the respondents impress attributes of e-learning, they are likely to believe in its benefits.

Table 3: Multiple Regression Analysis of Respondent Perception and Attitude toward Using E-Learning

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	VIF
	B	Std. Error	Beta			
Constant	0.553	0.419				
Perceived usefulness	0.540	0.107	0.517	5.050	0.000	1.594
Perceived ease of use	0.346	0.123	0.288	2.816	0.000	1.594
R ²						0.533
Adjusted R ²						0.520
F						40.473***

Note: *** is statistically significant at 1% level.

Dependent Variable: Attitude toward using e-learning

Source: Survey Data (August 2021)

According to Table (3), the independent variables: perceived usefulness and perceived ease of use have explained 52.0% of the variance in the dependent variable of the attitude toward using e-learning because the adjusted R² is 0.520. The overall significance of the model, the value of F-test, describes significance at 1 percent level. According to the constant value, the attitude toward using e-learning is 0.553 even if there is no perceived usefulness and perceived ease of use. Technology acceptance and diffusion in the community are high and thus, the respondents' attitude toward using e-learning exists.

The findings reveal that the positive and significant effects of perceived usefulness and perceived ease of use on the attitude toward using e-learning. It implies that the respondent perception is crucial for shaping the attitude and the study figures out the critical role of perceived usefulness and perceived ease of use. To create positive attitude toward using e-learning, the respective organization is required to highlight usefulness and ease of use. The respondents can be stimulated to change their previous attitude by explaining the advantages of using e-learning.

Perceived usefulness indicates the positive and significant effect on the attitude toward using e-learning at 1 percent level. It demonstrates that one unit increase in perceived usefulness leads to 0.540 unit increase in attitude toward using e-learning when all other variables are kept constant. It can be inferred that the higher the respondents perceive usefulness, the more their attitudes are assured. It asserts that perceived usefulness is important to affirm respondent attitude toward using e-learning. The beneficial attribution is persuasive for respondents and thus, the education institution is required to explain impressive performances of e-learning to the audiences. The respondents need to be informed the benefits of using e-learning such as less energy consumption, minimized cost, less time consumption, quick responsiveness, and low complexity.

Perceived ease of use also reveals the positive and significant effect on the attitude toward using e-learning at 1 percent level. It reveals that one unit increase in perceived ease of use leads to 0.346 unit increase in attitude toward using e-learning when all other variables are kept constant. It can be deduced that the higher the respondents perceive ease of use, the more their attitudes toward e-learning are affirmed. It claims that perceived ease of use is required for respondents to confirm their attitude toward using e-learning. Availability of different e-learning platforms is supportive to students in order to recognize ease of use. The convenience, readiness, accessibility, compatibility, and simplification are signals of ease of use which drive the respondents to affirm their attitude toward e-learning.

Table 4: Multiple Linear Regression Analysis of Perceived Usefulness, Attitude and Behavioral Intention

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	VIF
	B	Std. Error	Beta			
Constant	0.665	0.465				
Perceived usefulness	0.388	0.149	0.324	2.612	0.011	1.967
Attitude toward using e-learning	0.454	0.140	0.400	3.230	0.002	1.967
R ²						0.446
Adjusted R ²						0.431
F						28.613***

Note: *** is statistically significant at 1% level.

Dependent Variable: Behavioral intention to use e-learning

Source: Survey Data (August 2021)

Additionally, the influence of perceived usefulness and attitude toward using e-learning on behavioral intention is analyzed as described in Table (4). According to the result, the adjusted R² is 0.431 and the independent variable has explained 43.1% of the variance in the dependent variable of behavioral intention to use e-learning. The value of F-test, the overall significance of the model, shows significant at 1 percent level. The findings show that behavioral intention to use e-learning is 0.665 if there is no perceived usefulness and attitude to use e-learning among students.

Perceived usefulness indicates positive and significant effect on behavioral intention to use e-learning at 5 percent level and it is found its direct effect. It explains that one unit increase in perceived usefulness leads to 0.388 unit increase in behavioral intention to use e-learning when all other variables are kept constant. It infers that the higher the respondents perceive usefulness, the higher their behavioral intention to use e-learning is. The beneficial outcomes, i.e. using minimal resources to achieve learning objectives, stimulate respondents' behavioral intention to use e-learning.

Besides, attitude toward using e-learning has positive and significant effect on behavioral intention of respondents. It indicates that one unit increase in attitude toward using e-learning leads to 0.454 unit increase in behavioral intention when all other variables are kept constant. It explains that the higher the respondents affirm attitude toward using e-learning, the higher their behavioral intention is to use e-learning. As respondent attitude needs to be affirmed to become behavioral intention, the university is required to assure the positive attitude of students in order to induce behavioral intention to use e-learning.

DISCUSSION AND CONCLUSION

Perceived ease of use is a predictor of perceived usefulness according to the finding in this study. As the mean values of perceived usefulness and perceived ease of use indicate the agreement level, it can be concluded that students perceive e-learning constructively. When they realize the availability of numerous learning sources by applying portable electronic devices, they are driven to have positive attitude. Easiness is viewed as an attribute which contributes perceived usefulness of university students according to the finding. The university is required to develop course design which is compactable with the level of technology expertise of students. Besides, it is also suggested that the university should urge students to build community network in which they can share knowledge widely.

The significant role of perceived usefulness in enabling attitude toward using e-learning is prominent in this study. The advantages such as effectiveness of learning, enhancement of comprehension, speedy function, satisfactory accomplishment, and desirable benefits are crucial for the affirmation of student attitude toward using e-learning. As the students' perception is important to confirm their attitude, the university needs to elaborate the benefits of using e-learning and provide training how to apply technology in order to explicitly see its contributions. Besides, teachers should be encouraged to provide materials by using online platform and give assignments which are particularly required to discuss from different perspectives. In this way, students are likely to be motivated with searching their subject matters through internet and they come to realize the benefits of doing e-learning practically.

The critical role of perceived ease of use in affirming attitude toward using e-learning is also found in this study. Simplification, clarification, understandability, easy search, and accessibility with many devices are the symptoms of perceived ease of use and these are the requirements for formation of attitude toward using e-learning. Since most of the students use e-learning through their mobile phones which are portable devices, they recognize its attributes. Because of this recognition, their attitude is towards positive viewpoint. The students should be stimulated to use different search engines, web pages, web applications, and mobile applications so that they can get widespread knowledge of technology.

Perceived usefulness has significant influence on behavioral intention to use e-learning directly and indirectly according to the statistical result. The findings verify the positive effect of impressive contributions of e-learning on behavioral intention. To accomplish learning objectives, the university has already commenced blended learning for many years ago. The university students already have awareness of potential benefits from e-learning through their practical experiences. Although some students are still reluctant to accept e-learning, most realize the advantages of e-learning, consequently change their behavioral intention. It is recommended that the university should create formal and informal technical team which supports students to use e-learning. They should provide appropriate information and communication technology (ICT) training to teachers so that they are enthusiastic in implementing online teaching and learning programs and encourage students to use e-learning.

Respondent attitude is an antecedent of behavioral intention to use e-learning according to the regression result. Positive attitude of respondents drives behavioral intention to engage e-learning and its effect is prominent in the study. The outlook relating to e-learning is in the dominant position in enhancing behavioral intention of master students. When the university encounters a situation which is necessary to rely solely on online teaching and learning, the driving forces should be enlarged so that students are adaptive with changing conditions. The university should persuade students who are technology experts to help late adopters in order to be flexible with innovative learning environment so that their behavioral intention is induced.

LIMITATIONS AND NEEDS FOR FURTHER RESEARCH

The study especially emphasizes four variables: perceived usefulness, perceived ease of use, attitude toward using e-learning, and behavioral intention to use e-learning. Although technology acceptance model considers the effects of external variables on perceived usefulness and perceived ease of use, the study does not cover external variables. Further research can add the effects of external variables on perceived usefulness and perceived ease of use. Because of behavioral intention, the model assumes its effect on actual system use, however, the study does not include actual system use. Further studies can extend to actual system use of e-learning as the consequence of behavioral intention. In some studies, the extended technological acceptance model comprising of perceived usefulness, perceived ease of use, perceived risk, and perceived security was used. Further research can enlarge the model by adding perceived risk and perceived security in analyzing e-learning in higher education.

The respondents are MBA students who have been attending currently at Nay Pyi Taw Campus, Meiktila University of Economics. Further research can include all master students such as Master of Banking and Finance, Master of Public Administration, Master of Development Studies at Nay Pyi Taw Campus. Additionally, master students in Meiktila Campus and Mandalay Campus can be included in further researches. The study scope can extend e-learning in other universities so that the comparison can be made between different study groups and generalize e-learning in higher education, Myanmar.

ACKNOWLEDGEMENT

My heartfelt appreciation goes to Professor Dr. Tun Aung, Rector of the Meiktila University of Economics for his continuous encouragement of conducting research. My deep gratitude also goes to ethical research committee, for their review on my research work and endorsement of publication. I would like to give my great appreciation to MBA students who have been studying in Nay Pyi Taw Campus, Meiktila University of Economics for fulfilling my questionnaire completely and it would be impossible to accomplish my research publication without their kind cooperation.

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