

ATTITUDE AS MEDIATOR OF TECHNICAL USAGE SELF-EFFICACY, ONLINE COMMUNICATION SELF-EFFICACY, TECHNOLOGY ACCESS AND ONLINE MEDIA ON THE BLENDED LEARNING READINESS

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Abstract

Blended learning is an essential approach in the 21st century by combining face to face classroom teaching with online learning. Therefore, Higher Education Institutions (HEIs) should provide adequate resources, conducive environment and culture to support the blended learning readiness among their students. Attitude is an important variable in meeting the readiness and HEIs can achieve much more through attitude than through other variables. In this paper, with a sample of 305 students of SPACE UTM, the researchers use a model to show that the technology access, technical usage self- efficacy, online communication self-efficacy and online media affect not only on blended learning readiness, but also to their attitude. Furthermore, this study confirms that the presence of attitude as a mediator between the technology access, technical usage self- efficacy, online communication self-efficacy and online media and leads to increased blended learning readiness among students. However, the findings suggest that the increase of the technology access does not increase their attitude directly, but affect positively to blended learning readiness. This conclusion provides insightful implications for online learning practice in HEIs. The findings indicated that while HEIs should invest in advanced technology facilities, greater emphasis on the 21st learning skills would strengthen influence students' thinking and attitude in order to position the blended learning as their new way of learning.

Keywords: *Readiness; Blended Learning; Undergraduates Students; Mediator; PLS-SEM.*

1 INTRODUCTION

Blended learning has propelled into mainstream education. Over the years, there is an increase in the number of education institutions that are hopping on the blended learning bandwagon. This is due to the simple concept of blended learning, which allows for multi-channel teaching method by offering the best of classroom and online learning experiences all in one place. At the same time, instructors are able to present necessary information in arrange of different ways designed to suit the varying learning styles of their students. Nowadays, blended learning is seen as an important teaching and learning delivery method in higher education (Castro, 2019; Ibrahim and Nat, 2019; Zhang and Zhu, 2018).

A combination of online and offline teaching instructions harmonize learning activities between content and delivery thus provides students with greater flexibility. They can access learning materials wherever and whenever they choose and are no longer limited to making progress during a small window of classroom time. The idea of integrating ICT facilities into traditional face-to-face classroom helps students to take total control of their own learning. What is more challenging is

designing specific content and intensive instruction, practice and development in the online course content (Monteiro and Morrison, 2014). As educators, designing the content will be quite challenging and both educators and students requires sufficient knowledge on certain technologies as well as computer skills efficacy. Blended learning when implemented properly can enhanced student learning outcome, greater flexibility for student and teacher, improve autonomy, reflection and research skills, reduced student withdrawal rate, ability to foster a professional learning environment and potential cost and resources saving (Poon, 2013). However, university should first recognize to what extent the educators' and students' readiness to make certain the successful implementation of blended learning. It is of substantial importance to measure whether the technical usage self-efficacy, online communication self-efficacy, technology access and online media are positively affecting the readiness of blended learning. The framework extends the determination of blended learning readiness factors to measure whether attitude has mediating affect between critical factors and readiness before the formal evaluation on learning performance after adoption. The framework is tested via a questionnaire survey examining a blended learning readiness of a undergraduate at Universiti Teknologi Malaysia, Malaysia.

2 LITERATURE REVIEW

2.1 Factors Affecting Students' Readiness for Blended Learning

One of the most important factors that may influence the students' readiness for blended learning is technology access. The widespread use of smart phones among students indicates that students nowadays have access to technology in basic and advanced applications (Al-Husain, Dalal and Hammo, 2015). Here, technology access is related to the availability of equipment, namely computer and internet access, not only at school but also at home. Access to information is an important variable in the quality of online education. The more technology access that a student has, the more control they have as to when, where and how they can learn their lessons while affecting their readiness for blended learning. Many recent studies found that technology access is the key predictor for online learning readiness (Coynes, Frommolt, Rands, Kain, and Mitchell, 2018; Mohammed, 2019; Rasheed, Kamsin, and Abdullah, 2020). Hence, the current research expects that technology access may influence the readiness of students for blended learning.

Another important factor that influences students' readiness for online learning is technical usage self-efficacy. Generally, self-efficacy is defined as the belief that one has the capability to perform a particular behavior. In this study, technical usage self-efficacy may refers to as beliefs, values, confident, and comfort that an individual has in himself or herself while using technology in education. Students are millennia's and technologically skilled to access materials (e.g., text, video, or animation) and communicate with others in a computer-mediated environment over the internet (Lin, Lin, Yehand Wang, 2016). However, both instructors and learners should possess basic ICT skills to ensure the learning experience meet the learning objective. The result implies that the students are required to improve their technical skills to keep up with the continuous changes in technology (Mohammed, 2019). The findings are parallel with another study's of Hung (2010) who found that college students nowadays are very confident in the skills of computer / network (such as managing software, searching for information online, and perform the functions of the basic software), which is required for online learning, and therefore, the students will be ready to take online courses. In addition, individuals who use computers more often (with an average of 22.5 hours per week or slightly more than three hours per day) tend to have higher level of readiness. All aforementioned studies showed a positive relationship between technical usage self-efficacy and readiness for online learning. In short, technical usage self-efficacy measures an individual confidence in blended learning with certain degree of confidence. When technical usage self-efficacy is high, a student believes a high probability exists that he will be successful using blended learning. In other words, low technical self-efficacy suggests a limited belief perceived by a student to accomplish the blended learning on his own.

In many ways, online learning requires students to actively involve in online communications with their teachers and friends. Online communication self-efficacy in online learning is an essential

dimension for overcoming the limitations of online communication (Hung, 2010). Students' willingness to engage with others through electronic communication is a key feature of students' ability to predict success with online learning. In fact, other study revealed that male students have higher level of readiness for blended learning because they have higher level in online communication self-efficacy as compared to female students (Hao, 2016). In the current study, online communication self-efficacy measures one's confidence to engage with others through electronic communication. If a student is high in online communication self-efficacy, that student would also likely be high in readiness for blended learning.

In addition, Hao (2016) also emphasized that the success of blended learning can be determined by students' ability to view lessons directly on the Internet before coming to class. This called online media, which refers to the use of PowerPoint slides, online video and audio in online learning. Students who preparing themselves with knowledge acquisition by watching or reading lecture videos/notes before they come to the class could success in blended learning (Yilmaz, 2017). Students perceived beneficial effect for their advance preparation using online media, leading to the higher their readiness for blended learning. In contrast, low capability to access online media before entering class, the lower their readiness for blended learning.

Sánchez-Franco, Martínez-López and Martín-Velicia (2009) investigated the success of technology use in education depends largely on the attitude of students and their willingness to explore new technologies. It is important for students to have positive attitudes because this attitude will lead to acceptance of blended learning as part of the teaching and learning process. If students' beliefs show a positive impact, then their attitude will be positive. However, if their beliefs show negative or unfavorable consequences, then they will have a negative attitude towards blended learning. A more recent study (KoloandZuva, 2019) that has make a comparison between e-learning readiness of learners and educators found that the readiness of the learners being higher than what the educators are. They conclude that the higher level of readiness among learners is because they are millennial and technologically skilled. Meanwhile, the educators have lower level of readiness towards e-learning because they are unfamiliar with technology which may be influenced by age and attitude. Their findings supported the allegation of Chiou, Ayub and Luan (2010) who found that when individuals have a positive attitude, they are ready to engage in any web-based course using an online learning portal.

On the basis of the aforementioned arguments, the current research developed the following hypotheses:

- H1: There is a positive effect of technology access on students' readiness for blended learning.
- H2: There is a positive effect of technical usage self-efficacy on students' readiness for blended learning.
- H3: There is a positive effect of online communication self-efficacy on students' readiness for blended learning.
- H4: There is a positive effect of online media on students' readiness for blended learning.
- H5: There is a positive effect of attitude on students' readiness for blended learning.

2.2 Factors Affecting Attitude toward Blended Learning

When organizations, teachers and students accepting new ways of teaching and learning using technology, we often focus on attitude. Mutambik, Lee, and Foley (2019) found that attitudes towards the use of the technology in teaching and learning process are influenced by different variables. For example, one of the factors relating to attitude towards blended learning is the technology access. Blended learning requires students to have access to technology – both hardware and software, and therefore the challenges of technological accessibility cannot be ignored (Rasheed, Kamsin, and Abdullah, 2020). Individual attitudes toward blended learning may be influenced by the concerns of students who do not having equal access to and technological support with other peers (Chen, Chen and Chen., 2015). Similarly, the attitude were affected because of difficulty in low speed internet connection and outdated technology (Safford and Stinton, 2016). The technology access to high-speed internet connections is vital to successfully utilize the educational

resources in blended learning. Therefore, students with ability to access information using technology will have more positive attitude towards blended learning than those who are unable to access the technology.

Furthermore, respondents with computers have more positive attitudes towards online learning than those without computers. Their results show that individuals who have basic skills and frequently operate computer will have a positive attitude towards blended learning. A more recent study (Ayub, Zaini, Luan and Jaafar, 2018) also found that mobile self-efficacy may positively influence students' attitudes towards mobile learning. Based on these arguments, technical usage self-efficacy is expected to have a positive relationship with students' attitude towards blended learning.

In the online environment, community and communication development are essential for group learning to be enhanced and strengthened. The use of blended learning in teaching requires students to have the ability to communicate and use communication tools effectively as the online learning environment encourages students to constantly communicate and interact with content, teachers and peers (Topal, 2016). A comparison study of Konak, Kulturel-Konak, and Cheung (2018) provides empirical evidence that there is a significant difference between online group and face-to-face students in term of attitudes toward teamwork. Their study found that the online group had less positive attitudes toward teamwork compared to the face-to-face students. The result implies that if students are lack of self-efficacy in online communication with peers, it will affect their attitude toward teamwork as well as affect their attitude towards blended learning. Hao (2016) confirmed that male students have more positive attitude towards blended learning because they are better in online communication self-efficacy in blended learning as compared to female students.

Some studies found there is improvement in clinical skill knowledge, engagement and attitude as a result of online media in a blended learning using simulation videos (Coyne, Fommolt, Rands, Kain and Mitchell., 2018). Their study also found that the video simulations were useful tools for students to make a revision and viewing in their own time and in their preferred location, thus highlighting the positive attitude towards blended learning. In a similar vein, all the participants in a study of Jena (2016) have shown a positive attitude towards online learning as they are most positive about the convenience in controlling their pace of learning in terms of time and location. Accordingly, the availability of online media such as simulation video and audio is expected to have a positive impact on students' attitude towards blended learning.

In the light of this, the following hypotheses were developed:

H6: There is a positive effect of technology access on students' attitude towards blended learning.

H7: There is a positive effect of technical usage self-efficacy on students' attitude towards blended learning.

H8: There is a positive effect of online communication self-efficacy on students' attitude towards blended learning.

H9: There is a positive effect of online media on students' attitude towards blended learning.

2.3 Effect of Attitude as Mediator Variable

Attitude toward online learning is an important factor in predicting students' readiness as many factors may influence how blended learning is perceived and accepted. Factors affecting attitude are mentioned in the studies on attitude towards online learning. When the literature about attitude towards online learning is examined, it is seen that attitude positively affects online learning readiness (Kimiloglu, Ozturan, andKutlu, 2017; Mohammed, 2019; Mutambik et al., 2019). The current study attempts to use the Theory of Planned Behavior (TPB) to examine factors that UTM SPACE students consider as important in the adoption of blended learning and also explain the relationship among these factors.

TPB also indicates that individual behavior is driven by behavioral intention, where behavioral intention is influenced by individual attitudes toward behavior, subjective norms, and perceived behavioral control. Attitude toward behavior is about an individual has a positive or negative feelings

to perform a particular behavior. A particular behavior of the current study is refers to the students' readiness for blended learning. Therefore, this study is underpinned by the TPB in examine the students' readiness towards the acceptance of new technology which is blended learning.

The relevance of TBP is based on the fact that students' readiness for blended learning would be based on intention (students' readiness) which would influence their behavior. But TBP does not only establish the intention-behavior relationship, it also explains how other factors such as technology access, technical usage self-efficacy, online communication self-efficacy, and online media are mediated by attitude. It is expected that higher technology access, technical usage self-efficacy, online communication self-efficacy, and online media, will lead to positive attitude towards blended learning and eventually will increase the students' readiness for blended learning. Accordingly, we expect that technology access, technical usage self-efficacy, online communication self-efficacy, online media, and attitude would exert direct and indirect influence on students' readiness for blended learning.

Therefore, the following hypotheses were developed:

H10: Attitude mediates the relationship between technology access and students' readiness for blended learning.

H11: Attitude mediates the relationship between technology usage self-efficacy and students' readiness for blended learning.

H12: Attitude mediates the relationship between online communication self-efficacy and students' readiness for blended learning.

H13: Attitude mediates the relationship between online media and students' readiness for blended learning.

Hence, Figure 1 shows the proposed conceptual framework of this study accordingly to the stated hypotheses.

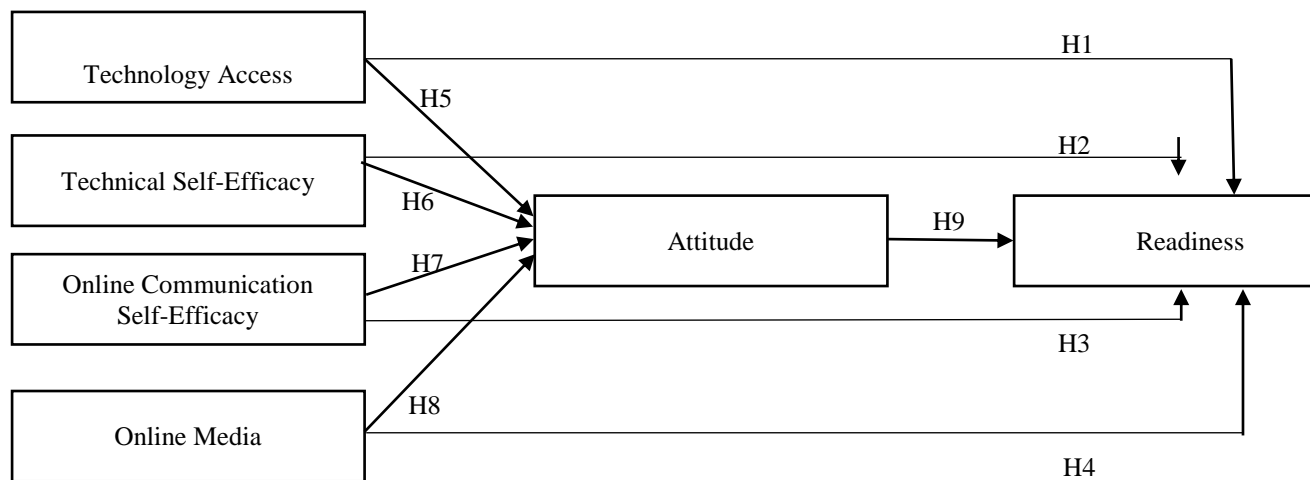


Figure 1. Conceptual Framework of the Study

3 METHODOLOGY/MATERIALS

Research survey with combination of the structured questionnaire method was used as the primary research design for this study. Both research designs can be considered as a suitable method since researcher intends to measure the targeted variables as a quantitative in nature (Saunders et al., 2009; Creswell, 2014). A total of 305 targeted respondents for the selected public university participated in

this study, and all the questions are completely answers by these respondents since the researchers used a face to face data collection method.

Basically, conceptual framework in this study consists of four independent variables and one mediator variable as well as one dependent variable. All the indicators for measuring these six variables were adapted from the previous research, which are twenty-two indicators were used. As for statistical technique used, the researchers used Structural Equation Modeling theory by using Partial Least Square estimation technique (i.e. PLS-SEM) since the researchers intend to explore the mediator effect among the targeted variables in this proposed conceptual framework (Ong and Puteh, 2017; Hair et al., 2017; Hair et al., 2012). Hair et al (2017) and Henseler and Chin (2010) suggested using 5000 replication of samples (i.e. bootstrapping theory) for accessing the significant influence of the variables by estimating the t-statistics and Bias-Corrected (BCa) confidence interval values. In addition, for measuring the effect of mediating, the following procedure for deciding the mediating effect was used (Zhao et al., 2010;Iacobucci et al., 2007). The procedures are:

If the path of independent variable to dependent variable was not significant and the indirect effect is significant, hence the mediating effect was a full mediation effect.

If the path of independent variable to dependent variable was significant and the indirect effect is significant, hence the mediating effect was a partial mediation effect.

Skewness and Kurtosis statistics were used for examining the distribution of the data and also the presents of the outliers in the data. The data can be considered approximately normal distribution and no presents of extremely outliers since both Skewness and Kurtosis statistics are in the range of ± 1.00 (Hair et al., 2017). This procedure is necessary to do although there is a free data distribution assumption in the context of PLS-SEM theory (Hair et al., 2011 and Hair et al., 2012) because the procedure to obtain the standard error of the parameter was using the bootstrapping procedure, extremely non-normal data distribution can give an ambiguous standard error of parameter estimates (Hair et al, 2017).

4 RESULTS AND FINDINGS

4.1 Measurement Model Analysis

Convergent validity analysis for the measurement model was performed and was presented in Table 1. The analysis indicated that, all indicators meet the minimum threshold value of .70 factor loading (Hair et al., 2017) except for one indicator (TA3 = .697). However, this indicator was maintaining in the analysis since the loadings value was much closed to .70. In addition, the Average Variance Explain (i.e. AVE) for each construct was above .50 (Hair et al., 2017), as well as both reliability tests (i.e. Composite Reliability and Cronbach’s Alpha) for each targeted construct were also above .70 (Hair et al., 2017). Therefore, it confirms that each variable have a good unidimensionality validity.

Table 1: Convergent Validity for Measurement Model

Variable / Indicator	Loading	AVE	γ	α
Technology Access				
I know how to access the online help desk (TA1)	.739			
I receive emails sent to my online campus email address even though it may not be my primary account (TA2)	.843			
I have access to the internet for substantial periods of time (TA3)	.702	.570	.841	.747
I have access to a dedicated network connection or have an Internet Service Provider/ ISP (TA4)	.729			
Technical Usage Self-Efficacy				
I have the basic skills to operate a computer (e.g. saving files, creating folders) (TU1)	.853	.765	.928	.897

I have the basic skills for finding my way around the internet (e.g. using search engines, entering passwords) (TU2)	.843			
I can send an email with a file attached (TU3)	.914			
I feel confident in performing the basic functions of Microsoft Office programs (e.g. MS Word, MS Excel, and MS PowerPoint) (TU4)	.886			
Online Communication Self-Efficacy				
I feel confident in responding to questions in online discussions (OC1)	.836			
I feel confident in posting questions in online discussions (OC2)	.797			
I feel confident in using online tools (e.g. email, discussion) to effectively communicate with others (OC3)	.850	.656	.884	.825
I think I would be to carry on a conversation with others using the internet (e.g. internet chat, instant messenger) (OC4)	.755			
Online Media				
I think I would be able to relate the content of short video clips (e.g. 1-3 minutes typically) to the information I have read online or in books (OM1)	.790			
I think that I would be able to take notes while watching a video on the computer (OM2)	.821	.705	.877	.791
I think that I would be able to understand course related information when it's presented in video formats (OM3)	.904			
Attitudes				
I am always ready to accept new ideas related to the use blended learning tools (AT1)	.790			
I am very interested in making blended learning tools related to my study / readings as learning preparations (AT2)	.823			
I feel that students need to be exposed to a new approach in the teaching and learning process especially regarding the use of blended learning tools (AT3)	.863	.693	.900	.852
I'm always ready to use blended learning tools in the learning process (AT4)	.851			
Readiness				
I have a private place in my home or at work that I can use for extended periods (LR1)	.814			
I have adequate time that will be uninterrupted which I can work on my online course (LR2)	.851	.643	.843	.720
I value and / or need flexibility (e.g. It is not convenient for me to come to campus two or three times a week to attend a traditional class) (LR 3)	.736			

Note: AVE = Average Variance Explained; γ = Composite Reliability; α = Cronbach's Alpha.

Table 2 indicated that, each latent variable was totally discriminate to each other's, since HTMT ratio test indicated that, each ratio value reported in Table 2 was below than .90 (Henseler et al., 2015). Hence, the indicators that were used to measured targeted construct were totally discriminate for the respectively construct.

Table 2: HTMT Discriminant Analysis for Measurement Model

Variable	TA	TU	OC	OM	AT	LR
TA	-					

TU	.710	-				
OC	.786	.720	-			
OM	.658	.560	.708	-		
AT	.618	.612	.736	.608	-	
LR	.746	.607	.795	.847	.700	-

Note: TA =Technology Access; TU = Technical Usage Self-Efficacy; OC = Online Communication Self-Efficacy; OM = Online Media; AT = Attitudes; LR = Readiness.

4.2 Structural Model Analysis

The analysis indicated that, these set of independent variables were able to explain about 44.7% toward Attitude, whereas in the simultaneous concept, these four independent variables as well as Attitude mediator variable were also can explain 54% of variance explains toward Readiness. In the context of the effect size and predictive relevance measurements, all specific paths in the model basically gives a small effect except for the Online media toward Readiness path, which is can be classified as medium effect (Ong and Puteh, 2017; Hair et al., 2012).

As for the causal relationship, by refereeing to the t-statistic values as well as the 95% Bias-Corrected confidence interval values, Technology access, online communication self-efficacy and online media having a positive significant effect toward Readiness, except for the Technology usage self-efficacy. The analysis also indicated that, Technology usage self-efficacy, online communication self-efficacy and online media were also simultaneously giving a positive significant effect toward Attitude, but not for the Technology access. Besides that, the analysis also confirms that, Attitude gives a significantly positive effect toward Readiness.

Table 3: Structural Model Assessment

Path	β	t-statistic	p-value	95% BCa Bootstrap	f^2	q^2	Remark
TA → LR	0.148	2.375	.018*	(0.032, 0.267)	.025	.021	Small
TU → LR	0.016	0.274	.210 (NS)	(-0.105, 0.120)	.001	.001	Small
OC → LR	0.206	3.401	<.01**	(0.083, 0.318)	.038	.034	Small
OM → LR	0.369	6.842	<.01**	(0.265, 0.487)	.179	.131	Medium
TA → AT	0.074	1.257	.210 (NS)	(-0.045, 0.184)	.005	.003	Small
TU → AT	0.191	2.214	.027*	(0.028, 0.346)	.035	.028	Small
OC → AT	0.356	5.446	<.01**	(0.239, 0.502)	.104	.093	Small
OM → AT	0.171	3.066	<.01**	(0.055, 0.267)	.033	.021	Small
AT → LR	0.153	2.464	.014*	(0.030, 0.265)	.028	.019	Small

Note: TA = Technology Access; TU = Technical Usage Self-Efficacy; OC = Online Communication Self-Efficacy; OM = Online Media; AT = Attitudes; LR = Readiness; NS = Not Significant; β = Standardized Beta Coefficient; f^2 = Effect Size; q^2 = Predictive Relevance; The bootstrap samples was 5000 samples; * $p < .05$; ** $p < .01$

4.3 Mediating Analysis

The indirect analysis reported at Table 4 indicated that, Attitude were simultaneously mediated the relationship between Technical Usage Self-Efficacy, Online communication self-efficacy and Online media toward Readiness. Since the direct effect of Technical Usage Self-Efficacy toward Readiness was not significant, hence Attitude was fully mediated the relationship between Technical Usage Self-Efficacy and Readiness, whereas Attitude partially mediated the relationship between Online Communication toward Readiness as well as relationship Online Media toward Readiness since the direct effect of both paths were significant. However, the indirect analysis also indicated that, Attitude was not mediated the relationship between Technology access and Readiness relationship, since the indirect effect for this path was not statistically significant (IEC = 0.011, $t = 1.042$, $p = .295$; 95% BCa

Bootstrap: (-0.014, 0.038)). Figure 2 and Figure 3 shows the results of analysis using PLS-SEM theory.

Table 4: Indirect Effect Assessment

Indirect Path	IEC	t-statistic	p-value	95% BCa Bootstrap	Direct path ^a	Remark of Effect
TA → AT → LR	0.011	1.042	.298 (NS)	(-0.014, 0.038)	TA → LR*	No
TU → AT → LR	0.029	2.183	.030*	(0.012, 0.081)	TU → LR (NS)	Fully
OC → AT → LR	0.055	2.296	.022*	(0.013, 0.103)	OC → LR**	Partially
OM → AT → LR	0.026	2.106	.036*	(0.008, 0.058)	OM → LR**	Partially

Note: TA = Technology access; TU = Technical Usage Self-Efficacy; OC = Online Communication Self-Efficacy; OM = Online Media; AT = Attitudes; LR = Readiness; NS = Not Significant; IEC = Indirect Effect Coefficient; ^aThe direct path was referring to Table 3; **p <.01; *p <.05.

5 CONCLUSION AND DISCUSSION

Based on these findings, it can be concluded that, if the average levels of technology access, online communication self-efficacy and online media were increase, then average level of readiness should be increase too. Besides that, the increment average levels of Technology usage self-efficacy, online communication self-efficacy and online media, simultaneously will increase the level of Attitude. However, the increases or decreases of technology usage self-efficacy average level will not affecting the average level of readiness, same as the effect of Technology access toward Attitude. As for the mediating analysis, if the average levels of technology usage self-efficacy, online communication self-efficacy and online media were increase, basically it will increase the average level of attitude; hence indirectly will increase the average level of readiness. However, the mediating analysis also indicated that, the increase of average level of technology access will only increase the level of readiness, not for the average level of attitude.

High- and low achieving students enjoyed learning in a blended course environment because it encouraged engagement, was more convenient and taught them the key concepts more quickly than conventional teaching methods. They prefer this type of learning over an exclusively face-to-face course or an entirely online format. Educational institutions view hybrid learning as a model that optimizes the use of the classroom and provides departments an advantage in terms of flexibility in their teaching timetable. In addition, students enjoy and appreciate their achievements in a hybrid learning environment, which are higher than in an exclusively face-to-face or exclusively online course. Characteristics of the blended learning environment inspire students to obtain knowledge and advice from various sources, to apply the subject matter and acquire confidence in implementing the knowledge they learn in a real world context.

This research allowed the authors to apply blended readiness framework as contribution to existing approach with the adoption assessment model. This can be part of overall blended learning framework that could be expanding into individual learning outcome performance and effectiveness. The most important is how higher institutions introducing blended learning as a new concept in transition to replace conventional face-to-face classroom by considering contributing factors to successful implementation as a practical viewpoint and whether the application of framework create a new learning curve of students. We expect more variables would be as mediating factors that contribute to the readiness of blended learning and this leads to a suggestion for future research. Thus, it would broaden the holistic approach that brings significant impact of the blended learning implementation.

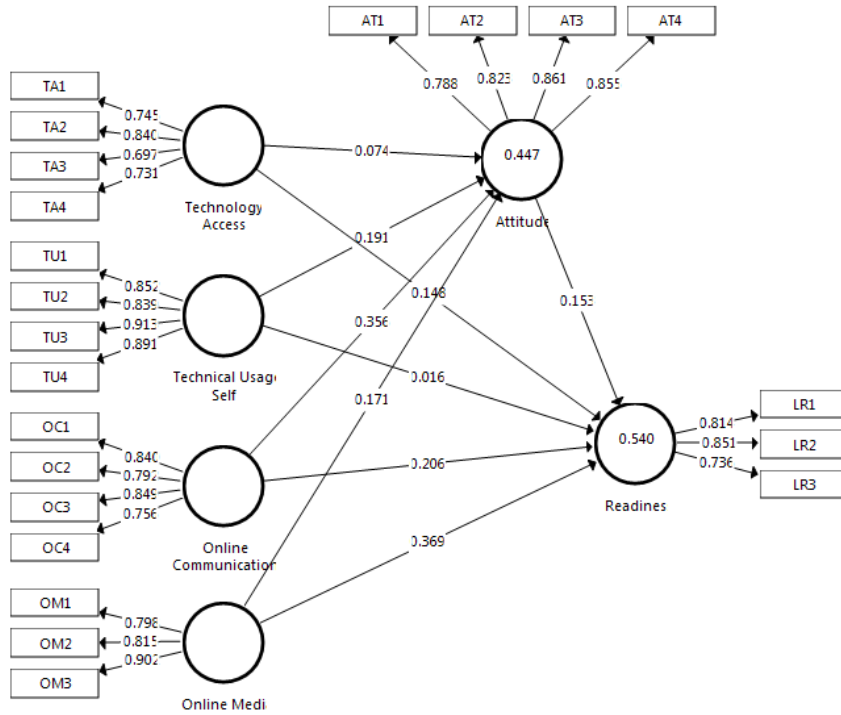


Figure 2. Loading Analysis

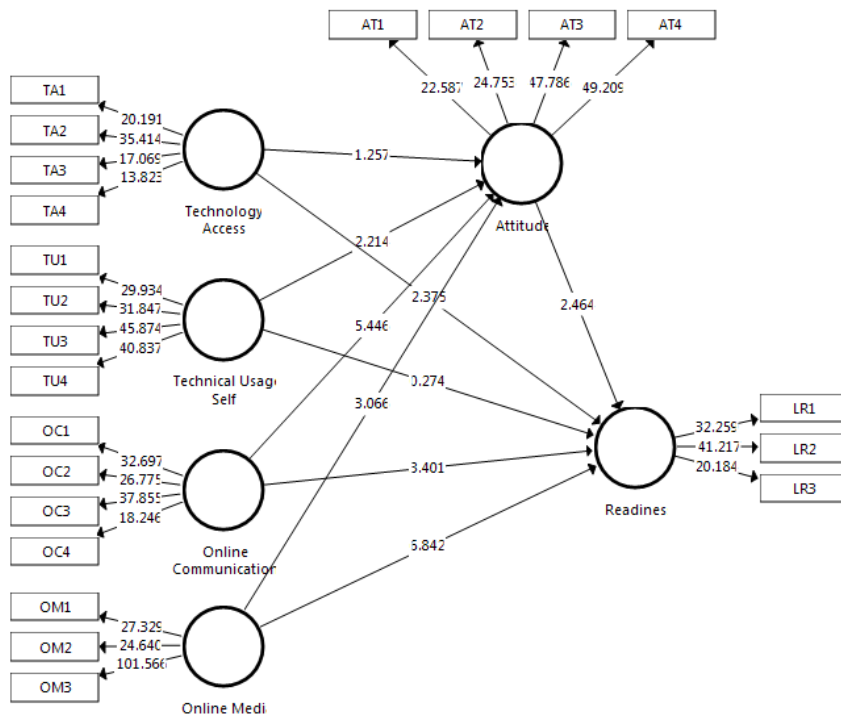


Figure 3. Bootstrapping Analysis

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