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Factors Influencing Perceived Ease of Use, Attitude and Behavioral Intention to Enhance ICT Learning Motivation in Higher Education in Cambodia

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Abstract

The purpose of this research aimed to evaluate the effects of perceived ease of use, attitude and behavioral intention to enhance ICT learning motivation in higher education in Cambodia. Therefore, the results of this study help to improve the learning environment of college students who have difficulties in using ICT as a tool in educational programs. This study is conducted with quantitative and multi-stage sampling techniques via employing purposive sampling, simple random sampling and quota sampling methods. Sample size of 521 students from three private universities in Cambodia. This study adapted the Confirmatory Factor Analysis (CFA) and the Structural Equation Model (SEM) to identify the relationship and the impact of determinants of perceived ease of use, attitude and behavioral intention to enhance ICT learning motivation in higher education in Cambodia. The results showed that Perceived ease of uses, information technology and attitude have significant impact on behavioral intention. Moreover, Perceived ease of uses and social influence have significant impact on Perceived usefulness. Also, facilitating conditions has significant impact on Perceived ease of uses. Likewise, information technology and Task Technology fit have significant impact on attitude. Furthermore, Perceived usefulness, social influence, facilitating conditions and Task Technology fit have no significant impact on behavioral intention.
Keywords: ICT, higher education, learning motivation

JEL Classification Code: A20, I20, I21, I23

1. Introduction[1]

The innovative technology recently has been rapidly advancing through smartphones, tablets and computers, attracting many students or professors to use them for their studies or teaching. Today's students are surrounded by technology where access to a huge amount of information is at their fingertips (Egbert, 2009). According to Wright et al. (2007) has described ICT is an opportunity for students to learn, explore, establish effective and free relationships with teachers and obtain assignments and response online, pledge and participate in connected deliberations. Students were satisfied with the products of their learning with ICT, and the ability of professional IT teachers contributes to their level of comfort and ability to familiarize to their teaching desires. Moreover, Coleman et al. (2016) resist the use of ICT in teaching that can change the learning situation from teacher-focused to student-focused. They emphasize that shifting the importance of teaching to learning creates a more connected and engaging environment for teachers and learners, and therefore shifts the role of teachers from disseminators to practitioners, mentors and classmates.

In Cambodia, the higher education system has experienced significant reforms since 1979, and the current government has shown some concern for both the expansion of the system and the improvement of quality in higher education, fundamentally since the 1993 UN-backed election. This election turned a new page of history in Cambodia because it brought the country to the next level of democracy, the first step being in 1947 when it passed and

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implemented its first constitution (Lao, 1998). Cambodia's first plan for the use of ICT in education was announced in 2004 with a 2015 target date for full implementation (Ministry of Education, 2004). The presence of ICT application in education have been integrated into teaching and learning environment. This is significantly challenging on the behavior of student learning due the changes from classroom meeting to online class meeting and from physical library search to digital online access. The changes were required to change their intention. So, this matters the population of the learning at the current status and future on their motivation for the study and this also matters the administrators of the education on understanding the influences of the relevant factors on application of ICT in learning environment. The use of ICT provides an influential knowledge environment and can change the learning progression so that scholars can actively deal with knowledge, lead themselves and build (Volman & van Eck, 2001). It is beneficial to promoting of the learning environment among university student population who are struggling with application of ICT as tool in education program. Gradually, the specific groups could gain insight and benefit from this research are higher education policy makers in Cambodia that continue to develop and enhance the ICT efforts within Cambodia Higher Education.

The research aims to investigate the effectiveness of the ICT usage to enhance ICT learning motivation in higher education in Cambodia.

2. Literature Review and Research Framework

2.1. Literature Review

2.1.1. Theory of Reasoned of Action (TRA)

TRA is a widely used theory describing the determinants of conscious behavior (Ajzen & Fishbein, 1980; Ajzen & Fishbein, 1975). The theory postulates that "an individual's performance on a particular behavior is determined by behavioral intentions (BI) and that BI is influenced by human behavior and subjective norms (SN) about the behavior in question" (Davis et al., 1989). Behavioral intention measures a person's intention to perform a specific action (Ajzen & Fishbein, 1975). Attitude is defined as an individual's positive or negative feelings about the performance of a target behavior (Ajzen & Fishbein, 1975). The subject norm represents "the perception of a person that most people important to him think he should or shouldn't perform the behavior in question" (Ajzen & Fishbein, 1975). TRA asserts that "an individual's attitude toward a behavior is determined by multiplying his or her core belief about the outcome of an action (bi) by the evaluation of that outcome (ei)" (Davis et al., 1989). Beliefs represent "the probability of an individual's subject that the implementation of a target behavior will result in" (Davis et al., 1989). Subject norms are "determined by the product of one's normal beliefs (nbi) and motivation to follow these beliefs (mci)" (Davis et al., 1989).

For many years, TRA has been used as a theoretical framework to study people's attitudes toward the use of information and communication technologies. Subjective norm and attitude were found to be the most important factors in determining the intention to use technology (Yuen & Ma, 2008).

2.1.2. Technology Acceptance Model (TAM)

The technology acceptance model (TAM) was developed by Davis (1989) from TRA (Ajzen & Fishbein, 1980). Davis (1989) used TAM to describe the determinants of consumer acceptance of a wide range of end-user computing. In TAM, two constructs are perceived usefulness and easy to use influence users' intention to use technology. Perceived usefulness is "the extent I think using certain systems makes the job more efficient" (Davis, 1989). Instead, perceived ease to use was "the degree to which one believes that a particular system is being used. No effort will be made" (Davis, 1989). Users will find this technology useful and useful at the same time, but it can be difficult to use. On the other hand, the real benefits of technology outweigh the effort to embrace it (Davis, 1989). Perceived ease to use was thought to have a direct effect on perceived usefulness (Davis et al., 1989). It is assumed that both perceived usefulness and perceived ease to use are determined by external variables (Davis et al., 1989). For example, Holden and Rada (2011) found that integrating perceived usability into TAM resulted in greater variation and greater impact on TAM factors than those without TAM, thus it supports the importance, positive impact and need for usability assessment when examining educational technology acceptance and use behavior. For many years, TAM has been working with school teachers (Pynoo et al., 2011), virtual learning environments (Rienties et al., 2016), pre-service teachers (Teo, 2010), e-learning (Yuen & Ma, 2008) and perceived usability and self-efficacy on teacher's technology acceptance (Holden & Rada, 2011). Although it was initially developed to explore technology adoption in business and commercial environments, it became a stingy model for use in educational settings (Drennan et al., 2005).

2.1.3. Perceived usefulness (PU)

PU was the level at which the user believes that the use of technology will benefit him to achieve a well job or academic results (Akbar, 2013; Venkatesh et al., 2003). It is a robust forecaster of intent to implement technology requests in a diversity of contexts (Avci & Askar, 2012).

Lessons have also recognized PU as a vigorous forecaster of students' BI in accepting Learning Management System (Hsu, 2012) and mobile Learning Management System (Han & Shin, 2016; Joo et al., 2016; Teo et al., 2019). Moreover, PU was one of the foremost features in the usage of technology and adoption (Joo & Sang, 2013; Mac Callum & Jeffrey, 2013; Negahban & Chung, 2014; Tarhini et al., 2017). In addition, it defines the extent to which one have faith in the use of a particular system will improve the competence of his work (Davis, 1989). Moreover, PU was defined as a significant predictor of educational satisfaction. Arbaugh (2002) inspected the technical and educational impact of online master's degree programs, we found that PU in the curriculum was powerfully related with student satisfaction.

H1: Perceived usefulness has no significant impact on Behavioral intention.

2.1.4. Perceived ease to use (PEU)

Perceived ease to use refers to "The level of ease associated with using the system" (Venkatesh et al., 2003). PEU was directly regulate the student' BI in accepting learning management system (Lee, 2008; Sánchez & Hueros, 2010) and Mobile learning management system (Han & Shin, 2016). Concurrently, some lessons have originate that the effect of PEU on BI is indirect through PU (Joo et al., 2016; Teo et al., 2019). Moreover, PEU was described a degree at which one trusts that the use of a particular system will be effortless (Davis et al., 1989). There is argued in IS works that PEU of any system is greater, The higher PU will be (Elkhani et al., 2014). Some investigators have supported this work as seen example (Bhatiasevi & Yoopetch, 2015; Ha & Stoel, 2009; Kim, 2014; Lee & Kim, 2009; Lee et al., 2011; Luarn & Lin, 2005; Ramayah & Lo, 2007). Hence, PEU was mentioned as " The degree to which one believes that using a particular system will be effortless " (Davis, 1989).

H2: Perceived Ease to use has significant impact on Behavioral intention.

H3: Perceived Ease to use has significant impact on Perceived usefulness.

2.1.5. Social Influence (SI)

Social influence is the level that an individual believes that other people believe that he should act, that is, using technology or systems (Venkatesh & Davis, 2000). Study shows that SI has a significant influence on students' BI and acceptance of learning management system (Akbar, 2013; Hsu, 2012; Šumak et al., 2010) and mobile learning management system (Han & Shin, 2016). In addition, PU of a technology or system can likewise be influenced by gatherings other than the user itself, counting the user's friends (Claar et al., 2014; Shen et al., 2006).

Moreover, SI is defined as "the degree to which an individual perceives that other should trust he or she should use the new system" (Venkatesh et al., 2003).

H4: Social influence has no significant impact on Behavioral intention.

H5: Social influence has significant impact on Behavioral intention.

2.1.6. Facilitating Conditions (FC)

Facilitating conditions like TRA, it starts with the acquisition of skills, support and opportunity to achieve results in terms of technology acceptance. It is the degree to which users believe in the existence of an organization or infrastructure in the form of resources and support for system use. FC have been shown to be significant for students to adopt e-learning systems (Abbad et al., 2009), especially Learning Management System (Šumak et al., 2010). But at the similar time, several studies have reported conflicting evidence of the importance of FC on the intention of students who accept Learning Management System (Fidani & Idrizi, 2012; Tarhini et al., 2015). Furthermore, Venkatesh et al. (2003), FC describe consumers who wish to believe that the equipment necessary to use new technologies will be available within their organization. This relates to the obtainability of organizational infrastructure and techniques needed for the planned use of technology.

H6: Facilitating conditions has no significant impact on Behavioral intention.

H7: Facilitating conditions has significant impact on Perceived ease to use.

2.1.7. Information Technology (IT)

Information Technology was a collective term for a number of technologies used for the management and processing of information. Human behavior was supported by information ecosystem technology (Nardi et al., 1999). IT is also an essential form for the creation and operation of information systems (Xu et al., 2016). Whenever new technology is introduced, there is a process of change that comes with its application (Fahmy, 2004). Many studies examine the impact of laptops on student learning. Some studies have described positive effects of laptop use on education (Barak et al., 2006; McVay et al., 2005; Saunders & Klemming, 2003; Siegle & Foster, 2001; Stephens, 2005).

Positive effects comprise increased contribution and active learning, improved student-teacher interaction, and increased motivation and academic attainment. Today, information technology is a key success factor for many organizations. However, in contrast, little research has been published regarding the use of IT to assist in higher education administration issues (Bitler et al., 2000).

H8: Information technology has significant impact on Attitude.

H9: Information technology has significant impact on Behavioral intention.

2.1.8. Task-technology fit (TTF)

Task-Technology fit is widely used to describe the use of information systems and work practices. According to TTF, task characteristics and functions that define TTF are the results for the performance and use of information technology users (Goodhue & Thompson, 1995). In TTF model, task characteristics mention to the technology used by an individual to achieve a technical job. "The action by which an individual transforms from an input into an output", and TTF refers to how well a particular technology meets the requirements of the task (Goodhue & Thompson, 1995). TTF is widely used to investigate the use of various IT such as the Internet (D'ambra & Wilson, 2004), computer education (Teo, 2009), e-learning systems (Lin et al., 2012), and social networking (Lu et al., 2014). The actual results show that the communication of task characteristics and technology characteristics has a strong impact on TTF and a greater impact on the use of social media sites (Lu et al., 2014).

H10: Task-technology fit has significant impact on Attitude.

H11: Task-technology fit has no significant impact on Behavioral intention.

2.1.9. Attitude

Attitude is found as an important aspect in predicting the adoption and use of information technology in the field of information systems. This refers to a response that affects a particular behavior and is believed to influence BI to use information technology (Davis, 1989). Several studies have investigated the role of behaviors that affect user access to information technologies such as online learning systems. (Cheung & Vogel, 2013; Edmunds et al., 2012) and prompt messaging facilities (Lu et al., 2009). More recently, Attitude was applied in the mobile context to understand user behavior related to mobile gaming (Ha et al., 2007; Liang & Yeh, 2011) and movable cloud facilities (Park & Kim, 2014).

H12: Attitude has significant impact on Behavioral intention.

2.1.10. Behavioral intention (BI)

Behavioral intention is defined as whether a person is consciously planning to perform a particular future action (Warshaw & Davis, 1985). According to Ajzen and Fishbein (1975) argued that individual purposes focused action in one way. Bagozzi et al. (1992) claimed that it functions as part of the self-actualization mechanism as long as the intent is activated and push the individual into a "must do" or "will" position. Rendering to Ajzen (2012), BI is the motivating factor that determines how an individual is keen to act in order to practice conduct. Though, Malhotra and McCort (2001) Claiming a better sympathetic of consumer behavior perspectives leftovers a major anxiety for market researchers. Moreover, (Venkatesh et al., 2003) is established that behavioral intention as a result of the decision-making process. In addition, BI is the probability or measure of a person's motive for doing certain behaviors (Ajzen & Fishbein, 1975).

The use of technology in higher education is an important advancement. According to Wims and Lawler (2007) specified that "Just as education opens the door to greater development, it is information technology that can open the door to education". The 1998 Global Statement of Higher Education for the Twenty-first Century states that "Higher education institutions must take the lead in unlocking the advantages and potential of new information and communication technologies, ensuring the quality and maintaining high standards of the practice and outcomes of education through open, equitable and international cooperation (Guttman, 2003).

2.2. Research Framework

The conceptual framework of this study is composed of related theoretical frameworks of various theoretical models. Moreover, this conceptual framework was constructed by eight variables. There were three kinds of variables in this learning; independent, dependent, and mediator variable. The independent variables were perceived usefulness, facilitating conditions, information technology, task-technology fit, social influence, and perceived ease of use, one mediator variable is attitude. And the only one dependent variable for this study was behavioral intention. The conceptual framework of this study is shown in figure 1. Hence, there are twelve hypotheses proposed for this research to find the

determinants of behavioral intention of the ICT usage to enhance ICT learning motivation in higher education in Cambodia.

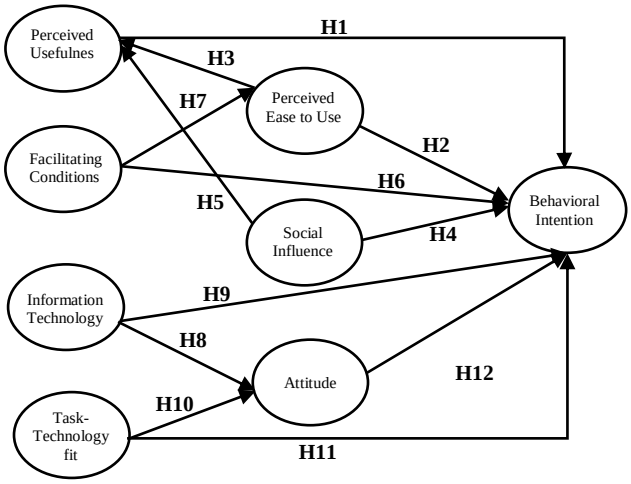

Figure 1: The Conceptual Framework

3. Research Methodology

The researcher applied the quantitative method and multi-stage sampling technique in selecting the universities and gathering primary data with designed questionnaire as a survey tool for this research. Questionnaire requested by the University Administration to establish a telegram team through three HEIs (AEU, WU-PP and WU-KCH), and then the Google forms link survey is copied and sent to the Telegram student group. The questionnaire consisted of three parts. The first part is the screening question to identify the respondents. The second part is measuring variables by using a five-point Likert scale items ranging from strongly disagree (1) to strongly agree (5) used to measure eight variables. The last part of the questionnaire is the demographic factors of the respondents. Firstly, the questionnaires were delivered to 650 target respondents and the data collected were analyzed through SPSS 22 and AMOS 23. Confirmatory Factor Analysis (CFA) was conducted to test the convergence accuracy, and the validation results were classified. Finally, the researcher applied the Structural Equation Model (SEM) to define the effect of variables.

3.1 Population and Sample Size

According to Carter (2010), target population contain groups of people who share their common attitudes toward a particular item. Moreover, Hair et al. (2007) specified that target populace is the full collection of elements involved in the research project. They are relevant because they have information that researchers design to collect. Supported by N. Malhotra and Birks (2007) who stated that target populace is an assembly of individuals that investigator are absorbed in studying. Therefore, the target populace in the investigate were selected undergraduate from first Year student to the fourth Year. According to Taherdoost (2017), the sample size was a significant aspect of any empirical research in which the objective was to make conclusions about the sample population. In addition, Malhotra and Birks (2007) specified that example size was the illustrative of the exact populace of the study. Furthermore, Hair et al. (2007) stated that to make the collected data relevant and useable to analysis, it was necessary to determine appropriate sample size. Supported by Soper (2018), he developed the calculator to explore the sample size required for a study that had applied structural equation modeling by anticipated effect size, desired statistical power level, number of latent variables, and number of observed. After the researcher inserted all the necessary data into calculator; anticipated effect size (0.2), number of latent variables (8), desired statistical power level (0.8), number of observed variables (30), and probability level (0.05). The calculator calculated the result of minimum sample size to detect effect was equal to 444, minimum sample size for model structure was equal to 126, and recommended minimum sample size was equivalent to 444 samples. Based on Soper (2018), the recommended minimum sample size is 444. Therefore, the researcher aimed to collect 500 samples for the three selected schools for the better statistical result.

3.2 Sampling Technique

Multi-stage modeling techniques of probability and non-probability methods were used: goal-directed sampling methods were applied to choose three private colleges (AEU, WU-PP and WU-KCH) then another for the study showed among June to August 2021. Three private colleges participating in the learning have been operating since 2005, So their structure can be well established and experiences. A stratified sampling method is applied in additional phase to choose the main participants as the information source. Questionnaire requested by the University Administration to establish a telegram team through three HEIs (AEU, WU-PP and WU-KCH), and then the Google forms link survey is copied and sent to the Telegram student group. Purposive sampling was used in the final stage to select students from three University of Cambodia to create an example size. Moreover, the researchers designated to signify the target populace were Khmer undergraduates studying in the first, second, third, and fourth years from three HEs in Cambodia. In addition, Purposive sampling allows us to select individuals whose opinions are related to the research issue (Jankowicz, 1995). The important information of purposive

sample techniques are likewise practiced to choose public with special information of the subjects to be interviewed for the question (Tongco, 2007).

Table 1: Populace and Example Size by three Cambodian Colleges

Colleges	Estimated Populace Size	Proportion (%)	Proportional Example Size
AEU	8,530	71%	355
WU-PP	1,755	15%	73
WU-KCH	1,725	14%	72
Total	**12,010**	**100%**	**500**

Source: Constructed by author (Based on MoEYS-2019: Education Congress Report, March, Phnom Penh, Cambodia)

4. Results and Discussion

4.1 Demographic Factors

The demographic profile of the 521 respondents in this study showed that the majority of respondents were female (68.4%) and male (31.6%). The majority of respondents aged 18 to 25 were 95.1%, those aged 26 to 30 were 3.7%, and those aged 30 or older were 1.3%. As for the year of schooling, 12.8% of the respondents in the first year, 38.6% in the second year, 28.1% in the third year, and 20.6% in the fourth year. They were also asked about their working status during the study period. As a result, the unemployment rate was 4.5%, 59% students, 31.1% employees, 1.3% self-employed, and 4.1% others.

4.2 Confirmatory Factor Analysis (CFA)

According to Allen et al. (2008) stated that the measurement model or CFA was a process to identify the variation and covariation between a usual of pointers. The concept is supported by Brown (2006) who stated that confirmatory factor analysis is a kind of physical calculation model that contracts precisely by dimension typical to examine a relationship between experiential variables then dormant variable. Importantly, Alkhadim et al. (2018) mentioned that CFA is important to perform for all latent variable of the research prior structural model. Perry et al. (2015), stated that the objective of CFA is to make a judgment whether a model is acceptable or not.

Table 2: Confirmatory Factor Analysis (CFA), Composite Reliability (CR), and Average Variance Extracted (AVE) Results

Variables	Source of Questionnaire	Items	Cronbach's Alpha	Factors Loading	CR	AVE
Perceived Ease to Use (PEU)	(Venkatesh et al., 2012)	4	0.812	0.972 - 0.995	0.992	0.975
Social Influence (SI)	(Venkatesh et al., 2003)	5	0.748	0.550 - 0.982	0.915	0.692
Facilitating Condition (FC)	(Venkatesh et al., 2012)	3	0.856	0.848 – 0.998	0.945	0.853
Information Technology (IT)	(Yong-Ming Huang, 2015), (Aharony, 2014), (Klimova, 2007), (Yi et al., 2016)	5	0.906	0.506 - 0.742	0.765	0.400
Task-Technology Fit (TTF)	(Lin & Huang, 2008)	3	0.711	0.695 - 0.758	0.771	0.529
Attitude (AT)	(Huang et al., 2015), (Yoon, 2016)	3	0.882	0.715 - 0.785	0.791	0.558
Behavioral Intention (BI)	(Ajzen, 1991)	4	0.847	0.702 - 0.843	0.875	0.637
Perceived Usefulness (PU)	(Venkatesh et al., 2012)	3	0.807	0.552 - 0.986	0.869	0.700

Note: CR = Composite Reliability, AVE = Average Variance Extracted.

As table 2 showed, all factors loading value of each item are greater than 0.50 aligning with (Comrey & Lee, 2013). In addition, Fornell and Larcker (1981), the Composite Reliability (CR) was greater than the cut-off points of 0.60 and Average Variance Extracted (AVE) was higher than the cut-off point of 0.40. Furthermore, discriminant validation tests are evaluated by calculating the square root of each AVE according to Fornell and Larcker (1981). Generally, each variable must be higher than the covariant relation between the variables in the model. In this study, the covariant relation between the two variables was found to be smaller than the AVE square root of the structural variable. Therefore, it can be assumed that the validity of discrimination is supported, as illustrated in table 3.

Table 3: Discriminant Validity

Cor	PE	SI	FC	IT	TT	AT	BI	PU
PEU	0.98							

SI	0.79	0.83						
FC	0.56	0.58	0.92					
IT	0.54	0.58	0.60	0.63				
TTF	0.45	0.48	0.59	0.55	0.73			
AT	0.50	0.63	0.60	0.61	0.71	0.75		
BI	0.45	0.45	0.45	0.61	0.63	0.74	0.80	
PU	0.67	0.66	0.37	0.59	0.55	0.52	0.43	0.84

Note: The diagonally listed value is the AVE square roots of the variables.

In this study, the first-class factor analysis technique was applied with the estimation of weight factor setting the goodness of fit indices. Some indices were also employed such as CMIN/df (Ratio of the chi-square value to degree of Freedom), GFI (Goodness of fit index), AGFI (Adjusted GFI), NFI (Normalized fit index), TLI (Tucker-Lewis index), CFI (Comparative fit index), RMSEA (Root mean square error of approximation, and SRMR (Standard root Mean square residual) involving 8 measurement models: Perceived Ease to Use, Social Influence, Facilitating Condition, Information Technology, Task-Technology Fit, Attitude, Behavioral Intention, and Perceived Usefulness as illustrated in table 4.

As shown in table 4, all values of indices met the criterion recommendation, indicating that the research hypotheses have proper suitability for the study, where CMIN/df = 1.960, GFI =0.923, AGFI = 0.896, CFI = 0.979, NFI = 0.959, TLI = 0.974 and RMSEA = 0.043.

Table 4: Goodness of Fit for Confirmatory Factor Analysis (CFA)

Index	Criterion	Value	Source
c2/df(CMIN/df)	<3	1.960	Kline, 1998
GFI	≥0.90	0.923	Hair et. al., 2010
AGFI	≥0.85	0.896	Kaya & Altinkurt, 2018
CFI	≥0.95	0.979	Hu and Bentler, 1999
NFI	≥0.95	0.959	Hu and Bentler, 1999
TLI	≥0.95	0.974	Hu and Bentler, 1999
RMSEA	≤0.05	0.043	Browne & Cudeck, 1993

Note: CMIN/DF = The ratio of the chi-square value to degree of freedom, GFI = goodness-of-fit index, AGFI = Adjusted goodness-of-fit index, NFI = Normalized fit index, TLI = Tucker-Lewis Index, CFI = Comparative fit index and RMSEA = Root mean square error of approximation

4.3 Structural Equation Model (SEM)

Moshagen (2012) stated that SEM is widely utilized in a behavioral aspect to investigate the relationships between observed and latent variables. Furthermore, Cheung (2015) stated that SEM is likewise recognized as covariance structure examination and correlation structure examination. Supported by Yuan et al. (2017), they stated that structural equation modeling becomes a major statistic tool in many contexts to study the relationship between latent constructs and also the relationship between latent construct and their observed indicators. The indices that were used for goodness of fit for SEM were GFI, AGFI, NFI, CFI, TLI, RMR, and RMSEA. After the step-by-step process in SEM and the adjustment, the model was in harmony with the research data as demonstrated in Table 5 for the goodness of fit. All the indices fulfil the recommended criteria: CMIN/df=2.302, GFI=0.914, AGFI=0.869, NFI=0.82, CFI=0.975, TLI=0.965 and RMSEA=0.050. Hence, the results suggested that each set of items signifies a single underlying factor and presents evidence for discriminant validity and fit.

Table 5: Goodness of Fit for Structure Equation Model (SEM)

Index	Criterion	Value	Source
c2/df(CMIN/df)	≤3	2.302	Kline, 1998
GFI	≥0.90	0.914	Hair et. al., 2010
AGFI	≥0.85	0.869	Kaya & Altinkurt, 2018
NFI	≥0.95	0.820	Hu and Bentler, 1999
CFI	≥0.95	0.975	Hu and Bentler, 1999
TLI	>0.95	0.965	Hu and Bentler, 1999
RMSEA	≤0.05	0.050	Browne & Cudeck, 1993

Note: CMIN/DF = The ratio of the chi-square value to degree of freedom, GFI = goodness-of-fit index, AGFI = Adjusted goodness-of-fit index, NFI = Normalized fit index, TLI = Tucker-Lewis Index, CFI = Comparative fit index and RMSEA = Root mean square error of approximation.

4.4 Research Hypotheses Testing Results

The result of SEM depicted in Table 6 can clearly explain for hypothesis 1 (H1), the standardized path coefficient between Perceived Usefulness (PU) and Behavioral Intention (BI) was 0.14 (t-value = 0.611). There is no a significant relationship between Perceived Usefulness (PU) and Behavioral Intention. Thus, H1 was not supported. For hypothesis 2 (H2), the Perceived Ease to Use (PEU) and Behavioral Intention (BI) was 0.60 (t-value = 2.528*). There is a significant relationship between Perceived Ease of Use (PEU) and Behavioral Intention (BI). So, H2 was supported. For hypothesis 3 (H3), the standardized path coefficient between the Perceived Ease of Use (PEU) and Perceived usefulness was 0.192 (t-value = 3.534*). There is a significant relationship between Perceived Ease of Use (PEU) and Perceived Usefulness (PU). Therefore, H3 was supported. For hypothesis 4 (H4), the standardized path coefficient between social influence (SI) and Behavioral Intention (BI) was -0.49 (t-value = -1.505). There is no a significant relationship between social influence (SI) and Behavioral Intention (BI). Thus, H4 was not supported. For hypothesis 5 (H5), the standardized path coefficient between Social Influence (SI) and Perceived Usefulness (PU) was 0.518 (t-value = 8.469*). There is a

significant relationship between Social Influence (SI) and Perceived Usefulness (PU). Hence, H5 was supported. For hypothesis 6 (H6), the standardized path coefficient between Facilitating Conditions (FC) and Behavioral Intention (BI) was -0.87 (t-value = -2.267). There is no a significant relationship between Facilitating Conditions (FC) and Behavioral Intention (BI). Thus, H6 was no supported. For hypothesis 7 (H7), the standardized path coefficient between Facilitating Conditions (FC) and Perceived Ease of Use (PEU) was 0.204 (t-value = 3.880*). There is a significant relationship between Facilitating Conditions (FC) and Perceived Ease of Use (PEU). Hence, H7 was supported. For hypothesis 8 (H8), the standardized path coefficient between Information Technology (IT) and Attitude (AT) was 0.437 (t-value = 5.313*). There is a significant relationship between Information Technology (IT) and Attitude (AT). Therefore, H8 was supported. For hypothesis 9 (H9), the standardized path coefficient between Information Technology (IT) and Behavioral Intention (BI) was 0.262 (t-value = 2.844*). There is a significant relationship between Information Technology (IT) and Behavioral Intention (BI). Henceforth, H9 was supported. For hypothesis 10 (H10), the standardized path coefficient between Task Technology (TTF) and Attitude (AT) was 0.584 (t-value = 10.924*). There is a significant relationship between Task Technology Fit (TTF) and Attitude (AT). Thus, H10 was supported. For hypothesis 11 (H11), the standardized path coefficient between Task Technology Fit (TTF) and Behavioral Intention (BI) was 0.106 (t-value = 1.387). There is no a significant relationship between Task Technology Fit (TTF) and Behavioral Intention (BI). Hence, H11 was not supported. For hypothesis 12 (H12), the standardized path coefficient between Attitude (AT) and Behavioral Intention (BI) was 0.514 (t-value = 5.216*). There is a significant relationship between Attitude (AT) and Behavioral Intention (BI). Therefore, H12 was supported. The summarized hypotheses testing was illustrated in table 6.

Table 6: Hypotheses Result of the Structural Model

Hypothesis	Path	Standardized Path Co-Efficient (β)	t-value	Test Result
H1	PU →BI	0.14	0.611	Not Supported
H2	PEU → BI	0.60	2.528*	Supported
H3	PEU →PU	0.192	3.534*	Supported
H4	SI → BI	-0.49	-1.505	Not Supported
H5	SI →PU	0.518	8.469*	Supported
H6	FC → BI	-0.87	-2.267	Not Supported
H7	FC →PEU	0.204	3.880*	Supported
H8	IT → AT	0.437	5.313*	Supported
H9	IT → BI	0.262	2.844*	Supported
H10	TTF →AT	0.584	10.924*	Supported
H11	TTF →BI	0.106	1.387	Not Supported
H12	AT →BI	0.514	5.216*	Supported

Note: *=p-value<0.05

5. Conclusions, Recommendations, and Limitation

5.1 Conclusions

In this study, the researcher aimed to investigate factors influencing perceived ease of use, attitude and behavioral intention to enhance ICT learning motivation in higher education in Cambodia. The sampling units in the study were 521. The questionnaires were distributed to students studying in year 1 to year 4 by Google forms link at each university like Asia Euro University (AEU), Western University Main Campus Phnom Penh (WU-PP), and Western University Branch base in Kampongcham (WU-KCH). The conceptual framework was applied from theory and statistics, which comprise Perceived ease of uses, information technology, attitude, social influence, perceived usefulness, perceived ease of uses, and behavioral intention to enhance ICT learning motivation in higher education for defining all hypotheses. Additionally, the research outcome was validity and reliability by Confirmatory Factor Analysis (CFA) and verify the influence and relationship between measured variables and conclude the research by Structural Equation Model (SEM).

The study reveals that Perceived ease of uses, information technology and attitude have significant impact on behavioral intention, consistent with existing studies (Gan et al., 2017; Sharma & Srivastava, 2019; Wang et al., 2018). Furthermore, Perceived ease of uses and social influence have significant impact on Perceived usefulness and facilitating conditions has significant impact on Perceived ease of uses, consistent with existing studies (Hu & Lai, 2019; Sharma & Srivastava, 2019). Also, information technology has significant impact on attitude. Additionally, task-technology fit has significant impact on attitude, consistent with existing studies (Gan et al., 2017; Hu & Lai, 2019). Besides, Perceived usefulness, social influence,

Task-technology fit and facilitating conditions have no significant impact on behavioral intention which contradicts existing studies (Chunmei, 2017; Hu & Lai, 2019).

5.2 Recommendation

Base on the outcomes of the research, the study found that Perceived ease of uses, information technology and attitude have significant impact on behavioral intention to enhance ICT learning motivation in higher education in Cambodia. Therefore, it seems important to develop positive attitudes in students about the use of technology. According to Luan et al. (2005) users with positive attitudes toward technology are more likely to use it. Moreover, perceived ease to use has significant impact on perceived usefulness. No matter how useful a technology is, students will refuse to use it if they find it difficult to use. Therefore, school authorities must create a learning environment in which students can gain experience using ICT. For example, strengthening college technology training and supporting students in mentoring roles will contribute to the use of mobile technology by lecturers and students in the classroom. According to Chen (2010) suggests that technology training has a direct impact on students' self-confidence and values, which in turn influences student-focused technology use. School authorities must also provide facilities such as reliable internet connectivity and regular power supply to enable lecturers and students to use mobile technology in the classroom. It is easy to use, both lecturers and students, helping to familiarize themselves with the features of mobile devices used in ICT. Familiarity with mobile technology not only increases their knowledge of how to use the technology, but also increases their confidence in practicing those behaviors.

The study also highlighted that the adoption of technology was an important factor as it was important for the growth of lecturers in their academic careers. Hence, Management should focus to train lecturers to use technology effectively in the classroom. This can be done by organizing various seminars, faculty development programs in the field of education. Not only does it focus on strengthening the skills of lecturers, but it also provides a better learning experience for students. Motivation and encouraging them to learn new skills are also important for easy adoption of technology. The school authorities must develop strategies to motivate lecturers embrace technology in the classroom. In addition, Policies and resources also allow lecturers to embrace technology. The study also highlights the influence of friends, colleagues, and team members are important factors influencing adoption of technology. Sharing experiences with peers in a formal setting and discussing the positive effects of technology and the ease of use of such tools can motivate teachers to embrace technology. It provides comfort and helps them adapt easily and seamlessly to the transition process. The infrastructure must be robust to support the collaborative learning process and must be up to date in both conditions, Security and related applications. Therefore, it is important for the university to stress more on ICT by persuading faculty to develop instructional contents that are more mobile friendly and enhance the benefits of using ICT to attract students.

5.3 Limitation and Further Research

The current study has several limitations that need to be acknowledged. First, this study was conducted only with three private universities and undergraduate students in Cambodia. Future research may focus on private and public universities for comparison. Second, in this study, only 650 students were selected as the sample size and the results were analyzed. Therefore, these results may not apply to all universities in Cambodia. Additionally, this study did not determine the effect of demographic factors such as gender, age, education, or employment on any constructs. Finally, researchers should include quality surveys, such as interviews or focus groups, and conduct interviews than online to obtain more reliable and high-quality data and provide better research outcomes.

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