

# Factors Influencing Mobile Learning Among Higher Education Students in Malaysia

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## Abstract

Mobile learning applications have been utilized in university teaching and learning settings. Mobile learning is a general term for education training and information which emphasis on the gathering of skill and knowledge. However, mobile learning is commonly referred to the intentional use of networked ICT in teaching and learning. this study proposes a model to identify that factors that influence the acceptance of mobile learning in higher education and to investigate if prior experience of mobile devices affects the acceptance of mobile learning. This study focus on higher education in Malaysia and 150 higher education students were taken as sample for this study. The objective of this research was to test the relationship from part of the UTAUT model which is performance expectancy, effort expectancy, social influence and facilitating conditions to predict whether the fourth element will affect the acceptance of mobile learning among public and private students. This study found that the performance expectancy, effort expectancy, social influence and facilitating conditions were significantly influence the acceptance of mobile learning. The technology will benefit students as well as the lecturers in completing their daily tasks.

**Keywords:** *Keyword: Mobile learning, UTAUT, higher education, Malaysia.*

## 1. Introduction

Mobile learning applications have been utilized in university teaching and learning settings. Cavus and Ibrahim (2009) investigated the ability of

learning new English language words using short message service (SMS). Wu et al. (2012) designed a context-aware mobile learning system for nursing training courses. Mobile learning is a general term for education training and information which emphasis on the gathering of skill and knowledge. However, mobile learning is commonly referred to the intentional use of networked ICT in teaching and learning. Other than that, it will save cost as compared to the traditional way of processing transaction. It can save the environment by minimizing paper usage which we all know paper came from trees. For example, software database can replace the needs for paper in order keep all financial data record. Furthermore, softcopy of the data is more preferred nowadays consistent with the advancement of today's world.

Based on the unified theory of acceptance and use of technology (UTAUT) (Venkatesh et al., 2003), this study proposes a model to identify that factors that influence the acceptance of mobile learning in higher education and to investigate if prior experience of mobile devices affects the acceptance of mobile learning. Mobile learning is common tool for lecturers, due to the mobile devices are cheaper compared with normal PCs and they are satisfactory and economical tools. Mobile devices have become more affordable, effective, and easy to use (Nassuora, 2012).

The factors affecting mobile learning performance presented by previous researchers are basically from descriptive or analytical studies with certain dimensions. The feasibility of practice, this

study intends to identify the factors influencing accounting students in acceptance of mobile learning in public and private universities. The results can help institutions adopt mobile learning technology by overcoming potential obstacles and hence reduce the risk of failure during implementation. Furthermore, academic can use the finding of this study as a basis to initiate other related studies in mobile learning area.

Mobile learning at a tertiary level is still in the beginning stages of implementation globally, and the pedagogy surrounding mobile learning is evolving and requires further research (Kukulska-Hulme, 2007). Mobile learning is in its infancy stage, different categories of mobile learning pedagogy are being developed, identified, and researched. Thus, Spencer and Hughan (2008) suggest that more research is needed to determine whether students perceive a benefit to use mobile learning.

Some deficiencies have been recognized in past studies. For instance, efforts to apply information towards the adoption model in order to explain the student's intentions to use mobile learning have been limited. Thus, further investigation is needed to determine whether these models need modification to address mobile learning acceptance (Pedersen & Ling, 2003). There are several issues facing the adoption of mobile learning, and there are pedagogical issues regarding the use of mobile devices in classrooms; will it disturb the learning process? (Corbeil & Valdes-Corbeil, 2007; Park, 2011). Also, will users (both students and lecturers) adopt this technology? Users may not be willing to accept mobile learning (Wang, Wu, & Wang, 2009). The objective of this study is to determine the factors influencing the adoption of mobile learning among accounting students in public and private universities.

## 2. Literature Review

### 2.1 Mobile learning in Malaysia

Malaysia is the second largest of mobile use in South East Asia which is Singapore the one. Most of the people have been see to use mobile phone in their work and become necessarily to them. Malaysia government having seen the growth of m-learning among 23 million people is mobile user. The Malaysian Communication and Multimedia Commission are combining to become one of the competitions to create or encourage the innovation mobile content and application. In 2008, they report

that the main user of mobile phone is ranging about 20 to 49 years old. The focus of m-learning is the learning itself rather than the technology in mobile phone. It can be the some of the country that having the higher education institutions will adopt on m-learning to improve their knowledge, skill and expertis

### 2.2 The benefits of mobile learning towards higher education

The technology is impacting the way people work, learn, conduct business, interact with each other and access information: mobile technologies allow people who do not have computers to access education. The use of mobile learning has been increasing over the last few years, with a rapid increase in developing countries which have the fastest growth rate in acquisition of mobile technology. Mobile technology can use for both formal and informal learning. In formal learning, students can use their mobile devices to access course materials while they are on the move or anytime they want to learn. Ally and Stauffer (2008) completed a study where students had the option of accessing their course materials from anywhere and at any time using their mobile devices. Results indicated that the majority of students felt that the use of the mobile device to access the course material was useful and provided both flexibility and convenience.

They also liked the convenience of being able to access the course work to the mobile device from wherever and wherever they had time to learn. Informal learning is learning that is not tied to a program of study and occurs on an ad-hoc basis. Informal learning occurs when individuals want to improve themselves so that they can be productive in society and on the job and to develop themselves personally. M-learning which allows individual to learn anywhere and at any time has a major role to play in informal learning (Ally et al, 2008; Ally 2012; Clough et al, 2009).

For example, completing language training to improve language skills to function on the job is an excellent application of M-learning. Ally & Steuffer (2008) conducted a study to determine the effectiveness of using m-learning to deliver English as Second Language (ESL) training to new immigrants. Students expressed a positive experience using the m-learning to learn English grammar.

### 2.3 Performance Expectancy

Performance expectancy is an important variable to determine the acceptance of mobile learning among accounting students in public university and private university. Venkatesh et al. (2003) defined performance expectancy as the extent to which a person believes that using an information system would help him or her to benefit in term of job performance. Based on result from previous study, it shows that Anderson et al (2006) used UTAUT to find the drivers and modifiers of user acceptance of tablet PCs among business faculty in universities. Davis (1989) demonstrated that facilitating conditions is most frequent factor used to decide a higher or lower adoption rate. Although, applying performance expectancy to a mobile learning context proposes that students will find mobile learning useful because they learn at their convenience and quickly. It will also improve their learning productivity (Wang, Wu, & Wang, 2009).

Abdul et al. (2011) stated that there is a relationship between performance expectancy and Intention to Use Digital Library (IUDL). The result found that performance expectancy was significantly and positively related to intention to use digital library. Shahrinaz (2010) stated that performance expectancy is positively associated with intention to adopt Social Network Site's (SNS) support learning activities. Thus, the following hypothesis is derived:

H1: There is a significant positive relationship between performance expectancy and acceptance of mobile learning.

### 2.4 Effort Expectancy

Venkatesh et al. (2003) defined effort expectancy as the degree of ease that individuals think they will have when using an information system. The three constructs from the previous model that related to the concept of effort expectancy are perceived ease of use, complexity and ease to use. This means that ease of use of a designed information system is the one factor of accepting information technology (Wu, Tao, & Yang, 2008).

Abdul et al. (2009) posits that effort expectancy will have positive relationship with intention to use digital library. Shahrinaz (2010) also stated that effort expectancy is positively associated with intention to adopt Social Network Site's (SNS)

support learning activities. Based on previous research suggests that individuals' expectations of system use might be different because of performance expectancy, effort expectancy, social influence (lecturers'), facilitating conditions, academic achievement (CGPA), gender, age, year of study and institutions. The researchers also support the idea of the concepts related to effort expectancy will be stronger determinants of individual intention for women, particularly those who are and who have a little experience with the system (Vankatesh et al. 2003). Based on UTAUT, it was expected that students' acceptance of a mobile learning system would depend on whether or not it is easy to use. Thus, the following hypothesis is derived:

H2: There is a significant positive relationship between effort expectancy and acceptance of mobile learning.

### 2.5 Social Influence (Lecturers')

Social influence was divided into two dimensions which are superior influence and peer influence (Igbaia, Schiffma, & Wiecekowski, 1994). This study incorporates one critical aspect of superior social influence and examines its effect on students' acceptance of mobile learning. In this study, superior influence refers to the lecturers' influence, which is defined as the extent to which immediate faculty members or instructors directly encourage or motivate their students to use mobile learning services. Lecturer's influence is an important construct to encourage students to adapt new technologies in their learning setting. Yu et al. (2011) stated that social influence has a positive effect on acceptance of mobile learning. Thus, the following hypothesis is derived:

H3: There is a significant positive relationship between social influence and acceptance of mobile learning.

### 2.6 Facilitating Conditions

The majority of definitions of quality of services have concentrated on customers' perception of and their satisfaction with the services being offered. Many research studies in human computer interaction (HCI) (Nielson, 1993 and Rai et al. 2002) and usability research (Delone & McLean, 1992 and Rai et al., 2002) defined quality of service in terms of reliability and response, content quality, and

security. The excellence of services being provider to users can affect the level of acceptance of new technology (Xin, 2004). Lee (2010) indicated that students' perception of online support service quality might be considered as a key factor affecting their behavioral intention toward the acceptance of mobile learning. Thus, the following hypothesis is derived:

H4: There is a significant positive relationship between facilitating conditions and acceptance of mobile learning.

### 3. Research Methodology

#### 3.1 Population and Sample

Population is an identifiable total set of basis of interest being examined by a specialist (Zikmund, 2003). However, in particular target population as defined the group about which the analysts are interested in making inferences or to generalize the conclusions (Henry, 1990). The target of population for this study will be the accounting students of higher education in Malaysia. The total sample for this study is 150 students. This study were using non-probability sampling for our technique to collect the data. The non-probability sampling that we choose to use in this research is convenience sampling.

#### 3.2 Measurement of Variables

##### 3.2.1 Measurement of Independent Variables

To ensure the content is validity, the questionnaires are used in this study and it was adapted from the original measurement scales used in UTAUT model (Venkatesh et al. 2003). Besides, in order to avoid the issues that can happen in wordings, measurement and ambiguities, the questionnaire is pre-tested highlight that such pre-test is vital in light of the fact that wording issue significantly influence accuracy (Zikmund, 2003). The exploration instrument comprises of two fundamental segments. The first segment is joins nominal scale and ordinal scale to recognize respondents' demographic information. The second segment will be measured using Likert Scale. The Likert Scale will have a 5-point scale with the anchors of 1 = strongly disagree; 2 = disagree; 3 = somewhat disagree; 4 = agree and 5 = strongly agree.

##### 3.2.2 Measurement of Dependent Variable

As in the Part A consist of academic achievement (CGPA), gender, age, year of study and institutions.

While, for Part B ranking is based on interval scale that consist of performance expectancy, effort expectancy, social influence, facilitating conditions and acceptance of mobile learning. The gender, year of study and institutions are based on ordinal scale. It allows the analyst to assign subjects to specific classes or categories. It is mutually exclusive, collectively exhaustive categories and exhibits only classification. Age and CGPA are based on ordinal scale. Not just classes variables so as to indicate contrasts among different classifications, it additionally rank-orders classes in some important way. It does not give any indication of the magnitude of the differences among the ranks (Adopted from DeLone and McLean, 1992)

### 4. Results and Discussion

#### 4.1 Reliability Analysis

To test the reliability, this study choose to run Cronbach's Alpha as it test the consistency of respondent's responses to the degree that items are independent will be co-related with one another (Sekaran, 1992). A correlation of 0.8 and above will ensure that the sets of variables in the questionnaires are reliable thus further ensure that the variables used in the study are reliable. Table 4.1 shows that our correlation is for each features is highly reliable, based on Cronbach's Alpha value above 0.8.

Table 4.1: Reliability Analysis

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.919	.908	25

For normality analysis, this study choose to run Kolmogorov-Smirnov test (K-S test) as it is used to test the goodness of fit of the variables used in the research and due to sample size is 150. In other words, K-S Test is used to test the normality of the distribution of the data. If the significance level is greater than 0.05, then normality is assumed. If the significance level is less than 0.05, it means that the distribution is not normal.

Table 4.2 shows that gender, age, academic achievement (CGPA), year of study, performance expectancy, effort expectancy, lecturer's influence, facilitating conditions and acceptance of mobile

learning have insignificant value. Thus, it shows that the data is not normally distributed on this research.

Table 4.2: Normality Test

	Kolmogorov-Smirnov <sup>a</sup>	
	Statistic	Sig.
ACCEPTANCE	.174	.000
		ACCEPTANCE
PERFORMANCE EXPECTANCY	Correlation Coefficient	.266**
	Sig. (2-tailed)	0.001
EFFORT EXPECTANCY	Correlation Coefficient	.582**
	Sig. (2-tailed)	0
LECTURER	Correlation Coefficient	.452**
	Sig. (2-tailed)	0
FACILITATING CONDITIONS	Correlation Coefficient	.643**
	Sig. (2-tailed)	0

Table 4.3: Correlation Analysis

Table 4.3 provides a conclusion of a Spearman correlation analysis to test the relationship among UTAUT model. Based on our research, there is significant positive relationship between performance expectancy and acceptance of mobile learning. The result is 0.266 levels are considered that performance expectancy had significant positive relationship with acceptance of mobile learning in public universities and private universities. Based on the previous study, performance expectancy and intention to use digital library are positive relationship (Abdul et al., 2011). Therefore, H1 is accepted.

There are strong significant positive relationships between effort expectancy and acceptance of mobile learning is 0.582 which more than 0.05 already significant. From the previous model, it related to the concept of effort expectancy consist of perceived ease of use, complexity and ease to use. It show that the public universities and private universities student are use the mobile learning when doing their study, assignment or research to gather more information. Based on the UTAUT that has been investigated by Vankatesh et al. 2003, effort expectancy is similar to perceived ease of use the

Technology Acceptance Model (TAM). Therefore, H2 is accepted.

Social influence is correlated with the acceptance of mobile learning when the results at 0.452 which show the social influence between acceptances of mobile learning have strong significant positive relationship. This research are supported by previous study Yu et al. (2011), which reported social influence has significant positive relationship with the acceptance of mobile learning. Therefore, H3 is accepted.

There are strong significant positive relationships between facilitating conditions and acceptance of mobile learning is 0.643 which the result shows its more than 0.05. It show that the students more on online support service quality as the key factor that can be affecting their behavioral intention toward acceptance of mobile learning. In term of mobile learning context, the individuals who are around the user will affect the pleasure of learner. Besides, based on the previous study facilitating conditions constructors appear as a significant structure in the model (Liu, 2010). Therefore, H4 is accepted.

## 6. Conclusions

The objective of this research was to test the relationship from part of the UTAUT model which is performance expectancy, effort expectancy, social influence and facilitating conditions to predict whether the fourth element will affect the acceptance of mobile learning among public and private students. This study found that the performance expectancy, effort expectancy, social influence and facilitating conditions were significantly influence the acceptance of mobile learning. The results were aligned with the hypotheses that the dependent variables have effect on the acceptance of mobile learning among student. From the university perspective, the technology will benefit students and lecturers in completing their daily tasks.

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