Factors That Influence On the Acceptance of Mobile Learning Services in the Institutes of Higher Education in Malaysia

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Abstract: **M-learning is a new education channel that universally assists people in acquiring knowledge and skill via the use of mobile technologies. This study attempts to create a theoretical model, in which student acceptance of Mobile learning implementation in the three Islamic universities in Malaysia are explained and predicted. The model expands the belief concept in Technology Acceptance Model (TAM) and Innovation Diffusion Theory (IDT) by including one more constructs namely, service quality.**

Keywords: **Mobile Learning, Service Quality.**

1.   INTRODUCTION

The success or failure of mobile learning services has so far been mainly investigated post trial and thus, it is necessary to investigate the factors, limitations and requirements that impact students' acceptance of mobile learning prior to implementing the system. This is to ensure that the resources devoted to the implementation will serve their purposes: use and acceptance. Apart from that, as indicated by Embi et al. (2013) and Almatari et al. (2011) the universities could also benefit from the investigation in a sense that the findings of the investigation could aid the universities to strategically plan based on the students' demands. As such, the universities could make better decision in their technology investment.

Williams (2009) stressed the importance of having the knowledge on the influencing factors of m-learning services' acceptance among students of higher education institutions since m-learning is a crucial alternative platform of learning. Further, individual's subjective willingness and cognitive engagement in m-learning activities entails one of m-learning's success factors. In order to enhance the availability of education in Malaysia, Alzaza and Yaakob (2011) have suggested that the higher education should engage in m-learning services. By doing so, Malaysia would be able to meet the priority of its strategy to brand the education particularly, the higher education (Robertson, 2008).

2.   THEORETICAL FRAMEWORK

In order to assist in the development of a robust theoretical foundation, two well-established models of adoption and intention which are the Technology Acceptance Model (TAM) and the Innovation Diffusion Theory (IDT) are utilised in this study; both TAM and IDT will be reviewed in the next subsections.

A.   Technology Acceptance Model (TAM):

TAM consisted of five components namely, perceived ease of use (PEOU), perceived usefulness (PU), attitude toward using (ATU), behavioural intention to use (BI), and behaviour system use. Specifically, as indicated by Fred D. Davis (1989) PEOU represents the degree to which a user believes that using a particular service would be effortless, while PU means the degree to which an individual perceives that using a particular system would improve the performance of his or her job. PEOU and PU are the two most important factors for system use and in fact, according to Liu and Han (2010) these two elements (PEOU and PU) are the key beliefs which lead to user acceptance of information technology.

Meanwhile, ATU directly predicts BI of the users, which determines AU. Later, an extension of TAM or known as TAM2 was proposed by Venkatesh and Davis (2000).

B.   Innovation Diffusion Theory (IDT):

Innovation Diffusion Theory or IDT was proposed by Rogers (1962, 1983, 1995, 2003), and like the TAM, IDT is also a well-established theory for user adoption. IDT describes the process of innovation decision, the factors of adoption rate, and numerous categories of adopters, while innovation diffusion is attained through users' acceptance and use of new ideas or things (Zaltman & Stiff, 1973). (Need to insert an introductory sentence/paragraph on relative advantage, compatibility, complexity, trialibility and observability here so that there is connection and flow. Maybe something on how these elements are related to/crucial in innovation decision etc.). Relative advantage is the extent to which an innovation is viewed as being superior to the idea it replaces, while compatibility is the extent to which an innovation is viewed as consistent with the present values, previous experiences, and needs of prospective adopters. Meanwhile, complexity is described as the extent to which an innovation is viewed as somewhat challenging to comprehend and utilise. On the other hand, triability refers to the extent to which an innovation may be tested on a restricted basis; implementing an innovation on a small scale basis will make full-scale adoption easier. Meanwhile, observability refers to the extent to which the outcomes of an innovation can be perceived by others; higher visibility leads to higher adoption rate.

C.   Integration Of Tam & IDT Theories:

This two theories have been proven to be highly successful in empirical studies such as indicated in studies by Igbaria, et al (1995), Igbaria, et al (1997), Karahanna, et al (1999), G.C. Moore and Benbasat (1996) and S. Taylor and P. Todd (1995) and as such, this study has chosen these theories as the base theories. TAM and IDT have the full capacity to study the Electronic Commerce (EC) and Internet application adoption, and at the same time, these two theories provide strong theoretical foundation for this study. Additionally, even though TAM and IDT originated from different fields, they share some noticeable resemblances. For instance, as highlighted by Moore and Benbasat (1991) and Wu and Wang (2005), the construct of relative advantage in IDT is often perceived as the equal to the PU construct in TAM, while the construct of complexity in IDT is very similar to PEOU concept in TAM. Further, some studies even combined TAM and IDT. For instance, in their study to evaluate and explain consumer *behaviour* in the context of virtual store, Chen, et al (2004) combined the original TAM with the compatibility contract, while Wu and Wang (2005) in their study has combined TAM2 with IDT. Figure A illustrates the building blocks for student acceptance of m-learning services.
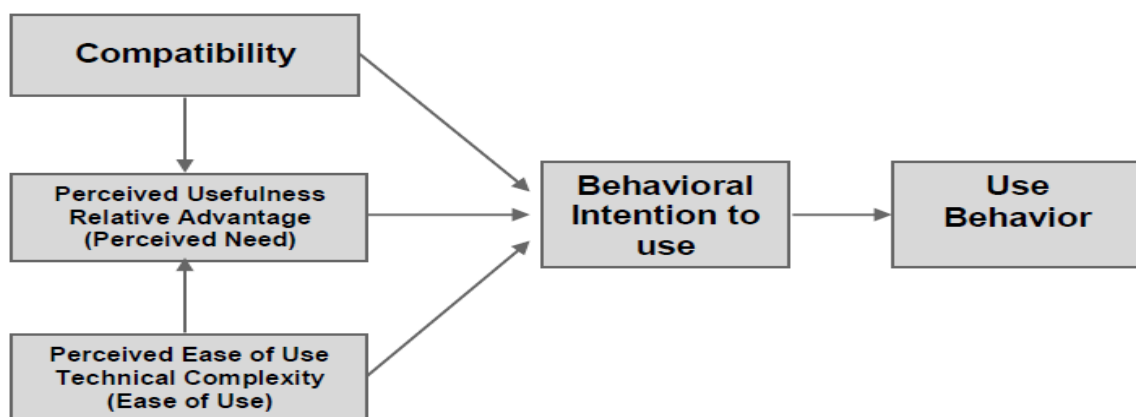

Figure A: Base Model for Student Acceptance of m-learning.

3.   RESEARCH MODEL FACTORS

In order to reap numerous benefits of m-learning, users must accept and use it. Thus, this calls for a need to scrutinize various aspects of this necessary phenomenon of individual reactions to computing technology from a variety of theoretical perspectives, from widely used technology acceptance theories.

3.1 Service Quality:

Service quality is generally derived from the perspective of customer attitudes, where quality refers to satisfying the requirements of the customer (Kruger, 2001; O'Neill, et al, 2001).

3.1.1 Service quality dimension:

(A) Accessibility:

refers to the time required to actively perform the service (Dabholkar, 1996) while in the context of m-learning, accessibility as defined by Al-Mushasha and Hassan (2009), is the availability of the system where and when the learners need to search or download any data.

(B) Interface Design:

Interface design is defined as the appearance of mobile portal and it is consistent with the dimension of tangibility in the SERVQUAL model, where tangible dimension as defined by Parasuraman et al. (1988), is the physical appearance, such as facilities, equipment, and personal.

(C) Reliability and Response:

In the SERVQUAL model, reliability and response entail consistency, dependability, accuracy, and ability to support customer with the appropriate information when there is a problem (Parasuraman et al., 1988).

(D) Content Quality:

Content quality can be determined from consumers' evaluation, for instance, Rieh (2002) regarded content quality as the degree to which users think that the information is useful, good, current and accurate.

(E) Personalization

According to Hyldegaard and Seiden (2004) personalized services refers to the capacity to customize the user interface, the information channels, and the services provided based on the needs, personal interests and preferences of the individual user and as indicated by Ho and Kwok (2002), existing literature indicates that there have been a substantial number of studies on personalization on the web.

(F) Security and Privacy:

Security and privacy is a complex social phenomenon and it signifies interactions among human and non-human agents from the aspects of behaviour, social, psychology, technology and organization (Lu, et al 2003).

4.   RESEARCH HYPOTHESES

The base model of this study incorporates three factors to form the conclusive research model and this is shown in Figure B. All hypotheses are interrelated and they are the building blocks of the model proposed by this study. The model by the study is called Mobile Learning Acceptance Model and it is illustrated in Figure B.
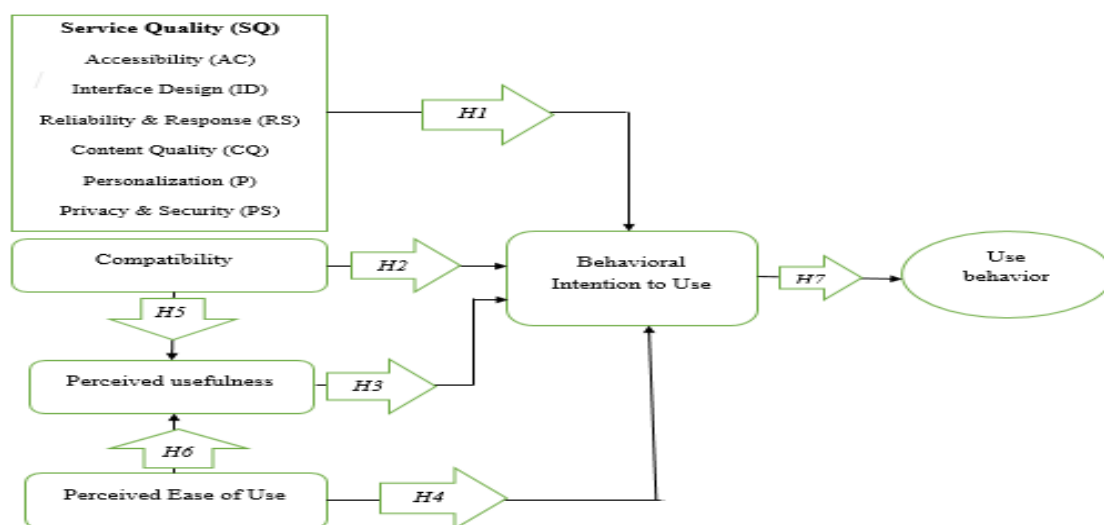

Figure B: Research Model

5.   RESEARCH METHODOLOGY

The most important in the first objective of this study is to examine the Service Quality factor such as (accessibility (AC) interface design (ID) reliability & response (RS) content quality (CQ) personalization (P) privacy & security (PS) that drive behavioural Intention to Use, Also, the second objective of this study is examine the expands the belief concept in Technology Acceptance Model (TAM) and Innovation Diffusion Theory (IDT) and integration of TAM & IDT theories.

 The study is a quantitative study using survey approach. The key instrument for data collection is the questionnaire. The sample of the current study is based on the population which contains all students in Islamic Science University of Malaysia (USIM), International Islamic University Malaysia (IIUM) and University Sultan Zainal Abidin (UniSZA). The sample of the current study is students who are using m-learning services for their learning settings. Random sampling approach will adopt to identify the respondents.

As a summary, all the zero-order correlation tests of the hypotheses are found to be significant and thus support the hypotheses at this level. It has been that behavioral intention to use has positive indirect relationships with the Use behavior. Also, service quality, compatibility perceived usefulness, and perceived ease of use factors have positive indirect relationships with the behavioral intention to use m-learning and compatibility and perceived ease of use have positive indirect relationships with the perceived usefulness.

6.   CONCLUSION

Nowadays, m-learning services are interesting and very recent addition as a new vital platform for the higher education environment. Nevertheless, Student's perspective is very important to investigate the use behavior of m-learning. M-learning in the higher education environment, combination of education channels and alternatives helps students to be in touch with their educational environment anywhere and anytime. The present study suggests the TAM and IDT has been widely used model to help understand and proceeding explain user behavior in an information system. The article has explained the technology acceptance model with the service quality factor.

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