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DIFFUSION OF M-LEARNING: AN ACCEPTANCE MODEL PROPOSAL

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ABSTRACT: The potential impact of mobile devices on higher education, our understanding of the issues surrounding the use of mobile technology for providing access to library and information resources, and their impact on lifelong learning opportunities are unclear and still evolving. Attempts to apply information adoption models to explain student use and intention to use audio, video, mobile services, and mobile learning have been limited and need further investigation to determine whether these models need modification to address mobile technology acceptance. This paper analyzes college students' acceptance attributes based upon Diffusion of Innovation (DOI) framework towards using the m-learning.

Keywords: M-learning, college students, diffusion of innovation, DOI, Sakarya University

INTRODUCTION

Mobile devices are found to be much more affordable than desktop computers and less expensive access to the Internet (even if the cost of connection is higher) (InfoDev, 2010). This increasing use of mobile devices in education enhanced by advances in mobile technology was studied by Fozdar and Kumar (2007) and Meister (2011). Nassuora (2013) reported a research that stated nine different activities students' performance in higher education setting, with their mobiles (Kennedy et al., 2008). However, the benefits gained from mobile services depend on the intentions of the students to use them for education purpose (Khanh & Gim, 2014).

Researchers across the globe have studied these theories for various technological innovations such as for e-learning context (Chang and Tung, 2008; Ndubisi, 2004; Lee, 2006), for online shopping (Vijayasarathy, 2004) and for Web- based information systems (Yi and Hwang, 2003). The m-learning is relatively a new field in Sakarya especially among students of a state university, up to our knowledge, no prior studies has been undertaken within the context of a state university students' intention to use the m-learning. So this paper tries to fill-in the gap by validating the Rogers' DOI to study the Sakarya university students' adoption to use smartphones for educational purpose.

THEORETICAL FRAMEWORK AND DEVELOPMENT OF HYPOTHESES

This section begins with an examination of the theoretical framework used in the research. Then related literature and a few studies in mobile learning are used to identify as what factors might influence adoption of mobile learning. An innovation is an idea, practice, or object that is perceived as new by an individual or other unit of adoption (Rogers, 2003). According to Rogers (2003), an innovation has five general attributes that influence adoption: relative advantage, compatibility, complexity, observability and trialability.

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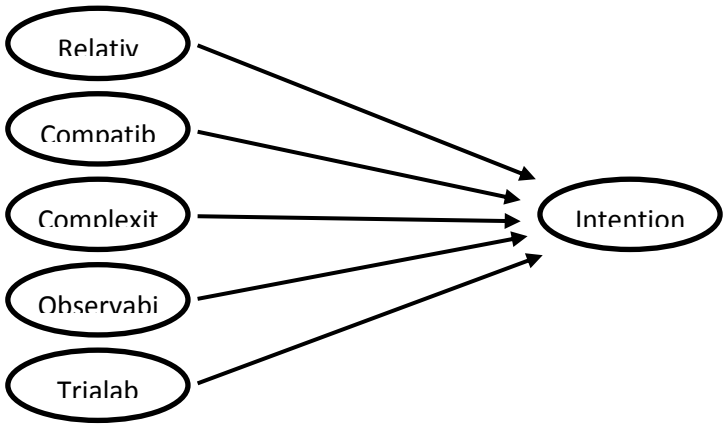

Figure 1. Research Model

Relative Advantage

Relative advantage refers to the degree to which an innovation is perceived as providing more benefits than its predecessor (Moore & Benbasat, 1991). Prior researches suggest that when user perceives relative advantage or usefulness of a new technology over an old one, they tend to adopt it (McCloskey, 2006; Rogers, 2003). This feature of Roger's topology has been studied by various researchers in the context of mobile banking adoption (Lin, 2011; Al-Jabri and Sohail, 2012); e-learning & blended learning (Tshabalala, et al. 2014); electronic commerce (Seyal and Rahman, 2003; Ndayizigamiye and McArthur, 2014); Web-supported instructions (Soffer et al. 2010) and mobile learning (Mcconatha et al. 2008). Therefore we hypothesize that:

H1: Relative advantage is positively associated with the students' intentions to use m-learning.

Compatibility

Clarke (2000) found ease of use to be one of the five significant factors that determined general use of wireless handheld devices. An individual might have a higher intention to adopt mobile learning if they think mobile learning is easy to operate. Again Lu and Viehland (2008) found a support in their m-learning study in New Zealand. Thus on that basis, we propose our second hypotheses:

H2: Compatibility is positively associated with the students' intentions to use m-learning.

Complexity

Cheung et al. (2000) defined complexity where an innovation could be considered relatively difficult to understand and use. They found that complexity influenced the adoption of Internet use. Chau and Hu (2001) and others had demonstrated that attitude towards using a technology was the significant determinant of behavioral intentions. A vast body of research had suggested that there was a strong support to ease the use of this new technology on its adoption (Luarn & Lin 2005; Wang et al. 2009). Chau and Hu (2001) also found that users were more likely to use new innovation if they had strong feelings of easiness with those innovations. Thus it is hypothesized:

H3: Complexity is negatively associated with the students' intentions to use m-learning.

Observability

Rogers (2003) defined the observability as the degree to which the results of an innovation are viable to others. Role modeling (or peer observation) is the key motivational factor in the adoption and diffusion of technology (Parisot, 1997). Similar to relative advantage, compatibility, and trialability, observability also is positively correlated with the rate of adoption of an innovation. Al-Jabri and Sohail (2012) used this in the context of mobile banking and found that it was significant. Thus it is hypothesized:

H4: Observability is positively associated with the students' intentions to use m-learning.

Trialability

According to Rogers (2003), trialability is the degree to which an innovation may be experimented with on a limited basis, where trialability is positively correlated with the rate of adoption. Therefore, more an innovation

is tried, the faster its adoption. Potential adopters who were allowed to experiment with an innovation would feel more comfortable with it and were more likely to adopt it (Agarwal & Prasad, 1998; Tan & Teo, 2000). Thus it is hypothesized:

H5: Trialability is positively associated with the students' intentions to use m-learning.

CONCLUSION

This preliminary study on students' use of the m-learning was necessary because the m-learning in higher education institution is still at early stage. The proposed model suggests five constructs of the original DOI are strong predictors of students' intentions on m-learning. We therefore, could use the research model of the study for supporting research on developing m-learning technology for the students in future.

As in most researches containing a model proposal, this study has its weaknesses. Several limitations of this study qualify the findings and suggest direction for future research. The study is limited to its model. By readdressing and expanding the study with extended items from TAM 2, TAM3 and/or UTAUT, will bring further insight that will definitely help to improve the study.

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