Acceptance of Information and Communication Technologies in Education:
An Investigation Into University Students' Intentions to Use Mobile Educational Apps

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ABSTRACT

This article explores the influential factors of acceptance of information communication technologies in high educational institutes. using intentions of the mobile educational information system. Based on available adoption models and theories, a research model was proposed and the data from the 250 questionnaires of Chinese students from Chinese and overseas colleges was analyzed by a quantitative method (PLS-SEM method), indicating several factors influencing the use of mobile educational apps. This study was conducted to check the possible changes in these influential factors because some authors pointed out that there might be some possible differences in different countries, fields and types of IT. The results show that student status quo bias will reduce their motivation in using mobile educational apps; their perceived task-technology fit will positively influence their perceived usefulness and perceived ease of use; and students' perceived descriptive norms of using mobile apps will positively affect their adoption intentions. The study verifies the validity of technology acceptance model, the perceived task-technology fit in explaining technology using behavior. Additionally, the study examines the effect of status quo bias and the mechanism of how task-technology fitness, social norms and status quo bias influence adoption intentions. Finally, study inspires some new research points from the perspective of demographic variables. The study will also help educators and designers to understand the antecedents of acceptance of mobile educational system and promote the quality of education.

KEYWORDS

Descriptive Subjective Norms, Information and Communication Technologies (ICTs), Mobile Educational Apps, Perceived Task-Technology Fit (TTF), Status Quo Bias, Technology Adoption

1. INTRODUCTION

At present, the Information and Communication Technologies (ICTs) industry grows with a high speed. Gartner, an information technology (IT) industry consultant, asserted that US$3.5 trillion was spent by ICT industries in 2011, emphasizing in consumer mobile, virtualization and security devices or software (Burt, 2010). Fast development of ICTs industry and the potentials in contributing to

social welfare and economic growth attract an increased number of investors and governments have moved their targets and attention to this field (e.g. Saxenian 1994, 2007; Rai et al. 1998; Kauffman and Techatassanasoontorn, 2009; Sachs, 2008). In order to maximize the benefits of ICTs in all the fields and promote the development of technology innovation (Koç, Turan, and Okursoy, 2016), more scholars move the attention from technological innovation to inter-disciplinary studies, with the factors influencing usage of technology and mercerization of technology be the main focus Bogart and Wichadee, 2015; Davis, 1989, 1993; Hew, Lee, Ooi, and Wei, 2015; Oye, Iahad, and Ab.Rahim, 2014; Venkatesh, Thong, and Xu, 2012). As one kind of products applying Information and Communication Technologies, the mobile services have attracted a series of studies to explore the antecedents of the users' intentions to use such newly developed technologies (Koç, Turan, and Okursoy, 2016). A few researchers explore the mobile services development (Conti, Militello, Sorbello, and Vitabile, 2009; Julien and Roman, 2006; Safar, Sawwan, Taha, and Al-Fadhli, 2009) and mobile and wireless networks (Durresi and Denko, 2009; You and Hara, 2010). In addition, some factors are reported to affect the intentions of users, including willingness (Gao, Krogstie, and Siau, 2011), prices (Blechar, Constantiou, and Damsgaard, 2006) and inter-convertibility and subjective norms (Schierz, Schilke, and Wirtz, 2010). However, the identification and mechanism of potential influential factors of adoption of mobile service remain unclear (Gao, Krogstie, and Siau, 2011).

Some scholars (e.g. Dlodlo, 2009; Vega-Hernández, Patino-Alonso, and Galindo-Villardón, 2018) pay attention to the role of the Information and Communication Technologies in education because of the positive effect of ICTs in makes teaching - learning process effective and interesting (Kumar, 2008). In the meanwhile, mobile services, as a kind of ICTs, have been increasingly applied in large numbers of colleges for teaching and learning (Kim, Mims, and Holmes, 2006). It was reported that over 90% public universities and 80% private universities in America had adopted mobile wireless devices for academic purposes (Swett, 2002). The forms of mobile wireless devices can be divided into various types, including web-enabled wireless phones (for example, smart phones), web-enabled wireless handheld computers (for example, palmtop, and tablet computers), wireless laptop computers, and Personal Digital Assistants (Kim, Mims, and Holmes, 2006). Additionally, Thornton and Houser (2001) asserted that more institutions would require students and staffs use mobile wireless phones for educational purposes. There are series of benefits of using mobile service for education. McKenzie (2001) asserted that the comparative advantages of mobile service when it was compared to traditional way of education can be summarized as the ease of movement, relaxed fit, strategic deployment, low profile, flexibility, cleanliness, convenience, simplicity, high speed and small size. Furthermore, using mobile educational service can increase efficiency and effectiveness of teaching, self-learning, group discussions, and student participation (Shim and Shim, 2001; Jones, Connolly, Gear, and Read, 2002).

Therefore, this study proposes a research question: What factors drive the intention to use mobile service in the higher education context? This research takes educational mobile service as an example to quantitatively explore the factors influencing the acceptance of mobile applications based on the TAM in a developing country, China. To be specific, the effects of students' perceived task-technology fit (TTF), descriptive norms (DES), status quo bias (SQB), perceived usefulness (PU), and perceived ease of use (PEoU) on their behavioral intentions to use mobile educational apps are explored. The study contributes to the literature from the perspective of both practice and theory. From the practical aspect, the study can help higher educational institutions to overcome harriers, and therefore better adopt mobile services to promote the quality of education. From the theoretical aspect, the study extends and examines the generalization of the technology acceptance model in a developing country. The study also points out further research directions for the coming studies.

The rest of the paper can be divided into following parts: the background information related to the technology acceptance model (TAM) and the usage of the mobile application in education are introduced. Then, the literature related to trust, personal characteristics, PEoU, and PU predict the intentions to use are discussed to generate the hypotheses. After that, method and results are demonstrated based on statistical analysis. Finally, the implications, limitations, conclusions are discussed.

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