

## Chapter 99

# Factors Affecting Students' Intention Toward Mobile Cloud Computing: Mobile Cloud Computing

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### **ABSTRACT**

*The adoption of mobile cloud computing (MCC) in education systems still faces several obstacles due to technical, environmental, psychological, and individual issues. Considering numerous advantages associated with the adoption of MCC, this article evaluates the frequency of using MCC by students at King Abdul-Aziz University (KAU) and investigates the factors that influence student intention to use MCC. A survey approach has been used to include 163 students of KAU through a random sampling. Results showed that the attitude towards MCC, perceived ease of use, perceived usefulness, social influence, accessibility of technology, individual characteristics, perceived privacy, and security are all important determinants of intention to use MCC. Findings contribute towards research and practice by revealing crucial factors that impact student intention to adopt mobile cloud computing in developing countries.*

### **INTRODUCTION**

Recently, information communication technology (ICT) has advanced rapidly. The internet usage among masses has become common as people of all ages are using internet while using their personal digital devices such as smart phones or tablets. Internet and ICTs are being used at every sphere of life to enhance the quality of life bringing the world in one's palm and only a click away from finding any solution (Majeed, 2015). This tends to change learners from just consumers to collaborators; and increases students' involvement in course content to rise active participation in learning activities (Fagbohun and Adetimirin, 2016).

DOI: 10.4018/978-1-7998-5339-8.ch099

According to Yadav (2014), cloud computing is internet-based computing in which software, information, and shared resources are delivered as a service that computers or mobile devices can access on demand. Cloud computing is already used extensively in education (Philip and Khodabandello, 2017; Yadav, 2014). Free or low-cost cloud-based services are used daily by learners and educators to support learning, content creation, publishing, collaboration, and social interaction (Barhate and Narale, 2015). Educational institutions can concentrate on offering students, teachers, and faculty essential tools that succeed them by sharing files, documents and IT services in the cloud (Yadav, 2014). According to Hossain (2017), Mobile Cloud Computing (MCC) is a new platform combining mobile devices and cloud computing to create a new infrastructure. In this way, the cloud is able to perform immense load of computing-intensive tasks and storing massive amounts of data. In this new architecture, data processing and data storage occur outside mobile devices (Akherfi et al., 2015; Hossain, 2017).

Mobile cloud computing plays an essential role in student life, because data sharing is very important for learning system (Majeed, 2015). Most of the cloud services provide security services to secure mobile cloud data within a cloud. Student and teacher data have lots of importance because usability and needs related to these data are increasing frequently. Today, there are various direct applications for teaching and learning as opposed to simple platform independent tools and scalable data storage (Majeed, 2015; Feng et al., 2015).

MCC delivers applications to mobile devices quickly and securely, with capabilities beyond those of local resources (Hossain, 2017). The users or learners can benefit from engaging with applications in their handheld devices that would not be possible because the cloud infrastructure performs intensive computing tasks and offers unlimited data storage (Yellin, 2017). The increase popularity of mobile handheld devices among young students is likely to make the future of MCC bright and promising in higher education. However, MCC in higher education is still in its embryonic stage of implementation, especially in developing countries such as Saudi Arabia (Al-Shahrani, 2016). The study first ascertains the usage extent of MCC among students at King Abdul-Aziz University (KAU) in Jeddah, Saudi Arabia; and then determines the factors that influence students' intention to use mobile cloud computing. The study will prove to be significant in analyzing the factors which influence the adoption of MCC in educational institutes. The study will also enhance the state of the art by providing information to overcome the existing limitations in the previous studies. The user acceptance level will illustrate the main obstacles hindering the complete adoption of computing devices in education system. Thus, based on the knowledge provided by the current study, the future computing devices can be significantly improved. Moreover, it will also prove to be beneficial for the stakeholders to address the existing issues in MCC, so that they can be efficiently installed in the education sector of developing countries, specifically, Saudi Arabia.

## **BACKGROUND**

Cloud computing is one of the latest innovative technologies to become immensely popular and easily adapted by big organizations, educational institutes, and even individuals of all ages (Philip and Khodabandello, 2017). According to Shiau and Chau (2016), there are three types of cloud computing services: infrastructure as a service (IaaS), platform as a service (PaaS), and software as a service (SaaS) that provide diverse applications for customers. In addition, it was a method to backup data; however, the increased popularity of cloud computing led to its sophistication and further development was being offered not only to organizations but also to individuals (Qi and Gani, 2012).

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