



## Consumer use of mobile banking (M-Banking) in Saudi Arabia: Towards an integrated model



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### ABSTRACT

Mobile banking is one of the most promising technologies that has emerged in recent years and could prove to have considerable value to both banks and customers. Thus, this study recognises the need to test the main factors that could predict the use of mobile banking as well as how using such a system could contribute to both customer satisfaction and customer loyalty. The conceptual model of this study combines two models (i.e. UTAUT2 and the D&M IS Success Model). A questionnaire survey was conducted to collect the required data from convenience sampling of Saudi bank customers. The main factors – performance expectancy, price value, facilitating conditions, hedonic motivation, habit, system quality and service quality – were found to have a significant impact on actual use behaviour. This study was cross-sectional, therefore future studies should implement longitudinal studies in order to re-collect the findings. Further, this study adopted convenience sampling of Saudi M-Banking users. This may adversely impact the issue of generalisability to the whole population. The gap in the M-Banking literature in Saudi Arabia would be bridged by proposing a comprehensive conceptual model that scrupulously clarifies the use of M-Banking from the perspective of Saudi users. Furthermore, this study would consider the adoption of numeric data in order to inferentially analyse them using SEM. This in turn would assist in generalising the findings to the whole Saudi population.

### 1. Introduction

The current advancements in the field of mobile technologies have yielded profound modifications and incessant resonating in the use of mobile banking in the financial sector (e.g. Alalwan, Dwivedi, & Rana, 2017; Gupta, 2013; Lin, 2011; Rana, Dwivedi, Lal, Williams, & Clement, 2017; Shaikh & Karjaluo, 2015; Zhang, Weng, & Zhu, 2018; Zhou, 2012b). M-Banking is an application of m-commerce delivered by financial institutions or banks that permits its users to perform financial transactions remotely by adopting a mobile device like Personal Digital Assistants (PDA), mobile phone or smartphone (Al-Jabri & Sohail, 2012). This service is implemented to make payments such as checking banking accounts, making transactions, and transferring money (Alkhalidi, 2016; Arcand, PromTep, Brun, & Rajaobelina, 2017; Slade, Dwivedi, Piercy, & Williams, 2015; Slade, Williams, Dwivedi, & Piercy, 2015). M-Banking is unique as it has different yet advanced levels of system quality, information quality, and service quality when compared

with previous e-banking services such as computers, kiosks, and laptops (Tam & Oliveira, 2017). For instance, having a mobile would enable customers to do banking transactions without the need for physical fixed machines. Thus, M-Banking enables users to connect with the cyber world at any moment and trade simultaneously, and this in turn has changed the ways of using banking services (Aboelmaged & Gebba, 2013).

This new technology has considerably reduced the level of financial fees compared with conventional banking services. For instance, according to international money transfer service Azimo, users of M-Banking in the UK save up to £7bn/year in financial fees by using M-Banking apps, which assist them in switching money more efficiently and evade overdraft charges (BBC, 2017). Therefore, British Telecommunications (2017) indicated that novel mobile-only banks (e.g. Monzo) are empowering users to gain better control over their finances. Accordingly, studying the factors that influence the use of M-Banking is a necessity for individuals and/or the society in general, as it

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could save ‘billions’ in charges (BBC, 2017). For the aforementioned reasons, persons tend to adopt M-Banking and shifting to deal with the banks that use M-Banking’s services. Recognising the importance of adopting M-Banking in order to gain competitive advantage in the markets, competing banks around the world have invested about \$115 billion with the aim of increasing the level of M-Banking adoption. The hope is that by providing them with this advanced technology, it will increase consumer satisfaction and strengthen their loyalty, preventing them from turning to other competing banks (Alalwan et al., 2017; Chung & Kwon, 2009; Ganguli & Roy, 2011).

In the Kingdom of Saudi Arabia (KSA), there is an increasing interest in engaging mobile systems in all aspects of citizens’ and customers’ daily life. Such interest could be attributed to the new trends adopted by the Saudi government to invest more in new and innovative applications that make people’s lives much easier. This interest is clearly observed in what has been said to be Saudi Arabia’s Vision 2030. Further, both the public and private sectors have projected about \$2.14 billion to build and introduce new smart systems (Exportgov, 2018). As for mobile technology, the number of mobile phone subscribers is very high in KSA where the mobile penetration rate has reached about 140% over the first quarter of 2017 (Albawaba, 2017). Further, about 22.85 million Saudi customers have used their mobile phone to access Internet services (Statista, 2018a). According to a survey conducted and published by Statista (2018b), about 53% of customers are interested in using online banking transactions. On the other hand, based on a report published by Albawaba (2017), 50% of Saudi bank customers expressed their intention to switch banks because of the low level of mobile and online banking solutions offered by their current provider. Moreover, mobile platforms have been reported by 40% of Saudi customers as the most favourable and convenient banking channel to access banking services (Albawaba, 2017). This, in turn, could raise a question about the effectiveness and feasibility of investment in mobile banking channels to match Saudi customers’ requirements as well as reduce the bank switching rate of Saudi customers.

Furthermore, a considerable number of studies in different contexts have focused on the factors that impact the use of M-Banking (e.g. Akturan and Tezcan (2012) in Turkey; Faria (2012) in Portugal; Hanafizadeh, Behboudi, Koshksaray, and Tabar (2014) in Iran; Afshan and Sharif (2016) in Pakistan; Koenig-Lewis, Palmer, and Moll (2010) in Germany; Masrek and Razali (2013) in Malaysia; Alalwan, Dwivedi, Rana, and Williams (2016) in Jordan; Sharma, Govindaluri, Al-Muharrami, and Tarhini (2017) in Oman; Xiong (2013) in China). Within the context of Saudi Arabia, numerous studies have examined M-Banking usage among customers (e.g. Al-Husein & Sadi, 2015; Al-Jabri & Sohail, 2012; Alkhaldi, 2016; Alsheikh & Bojei, 2014; Hidayatur-Rehman, 2014). Moreover, in order to examine the factors that impact use of M-Banking, researchers used various models. For example, Sripalawat, Thongmak, and Ngramyarn (2011) used Technology Acceptance Model (TAM); Al-Husein and Sadi (2015) implemented an extended TAM; Lee (2009) integrated Theory of Planned Behaviour (TPB) and TAM; Al-Jabri and Sohail (2012) embraced Diffusion of Innovation Theory (DIT); Yu (2012) employed UTAUT; Alalwan et al. (2017) adopted UTAUT2; and Tam and Oliveira (2017) used the Delone and Mclean (D&M) IS Success Model.

However, this study differs from the aforementioned studies as it expands the range of factors that might impact the use of M-Banking within the context of Saudi Arabia. This is done through combining two models i.e. the Unified Theory of Acceptance and Use of Technology (UTAUT2) of Venkatesh, Thong, and Xu (2012) and the D&M IS Success Model of Delone and McLean (2003) for examining M-Banking. The espousal of this conceptual model would contribute to the current literature review as there is no up-to-date study that combines UTAUT2 and D&M IS Success Model in one model in order to examine the factors that impact the use of M-Banking. Furthermore, the gap in the M-Banking literature in Saudi Arabia would be bridged by proposing a comprehensive conceptual model, which scrupulously clarifies the use

of M-Banking from the perspective of Saudi users. Furthermore, this study would consider the adoption of numeric data in order to inferentially analyse them using SEM. This in turn would assist in generalising the findings to the whole Saudi population.

## 2. Literature review

Identifying the factors that impact the level of actual use of a technology has been perceived as an essential aim for changing the characteristics of a given technological service to make its adoption more attractive (Baabdullah, Alalwan, & Al Qadi, 2018; Kuisma, Laukkanen, & Hiltunen, 2007). With regard to M-Banking, a considerable number of studies (e.g. Al-Jabri & Sohail, 2012; Baptista & Oliveira, 2015; Choudrie, Junior, McKenna, & Richter, 2018; Lee & Chung, 2009; Yu, 2012; Zhou, 2011) in various contexts (e.g. Saudi Arabia, South Korea, Taiwan and Mozambique) examined the variables that might impact M-Banking use. Studies that investigate the use of M-Banking have embraced a number of theories, such as Diffusion of Innovation Theory, UTAUT2, and the DeLone and Mclean IS Success Model, to tackle this aim. As such, Al-Jabri and Sohail (2012) relied on Diffusion of Innovation Theory to analyse the data of 330 actual M-Banking users within the domain of Saudi Arabia and indicated that relative advantage, compatibility and observability positively impacted the actual use of Saudi customers, while trialability and perceived risk negatively influenced the actual usage.

Furthermore, Lee and Chung (2009) adopted the DeLone and Mclean IS Success Model in order to examine users’ satisfaction regarding M-Banking within the domain of South Korea. Thus, after using questionnaire to collect data from 276 M-Banking customers, the analysed data indicated that system quality and information quality of M-Banking service influences users’ trust and satisfaction. However, they found that interface design quality of M-Banking does not impact the dependent factors of trust and satisfaction. Indeed, when there is a positive impact of satisfaction, the use of the service would be positively impacted as well. This logic inferential is based on the arguments of the DeLone and Mclean IS Success Model itself. To go into more detail, within the D&M IS Success Model, Delone and McLean (2003, p.23) argued that “use” and “user satisfaction” are “closely inter-related”. Although “Use” should come before “user satisfaction” in “a process sense”; however, the successful and positive experience with “use” would result in higher “user satisfaction” in a causative way. Likewise, higher levels of “user satisfactions” would result in maximising “intention to use” and eventually “use” (Delone & McLean, 2003, p.23). Therefore, based on this logic, the positive impact of system quality, information quality of M-Banking service mentioned in Lee and Chung’s (2009) findings on satisfaction can be safely extended to include the use of M-Banking.

Moreover, through relying on the UTAUT model, Yu (2012) examines the variables impacting the usage of M-Banking within the context of Taiwan. After analysing the data collected from 441 participants, the findings indicate that behavioural intention, perceived self-efficacy and facilitating conditions positively influence the actual usage of Taiwanese users. Likewise, Baptista and Oliveira (2015) used UTAUT with cultural moderators in order to investigate the factors affecting M-Banking within the domain of Mozambique. More specifically, they combined the UTAUT model of Venkatesh, Morris, Davis, and Davis (2003) with cultural moderators extracted from Hofstede (2003). After analysing the numeric data by using structural equation modelling, they reported that facilitating conditions, habit and behavioural intention significantly and positively affect the use of M-Banking. More importantly, they found that cultural moderators significantly moderate the strength of the relationship between the habit and behavioural intention as independent variables on the one hand and the use of M-Banking, which is the dependent variable, on the other hand. Among distinctive cultural moderators, collectivism, uncertainty avoidance, short term and power distance were proved to have the most important

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