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Research Note

The adoption of M-government services from the user's perspectives: Empirical evidence from the United Arab Emirates

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ABSTRACT

The primary aim of this study is to examine the factors that predict end users' intention to adopt mobile government (m-government) services in a developing country. The research is based upon a self-administered questionnaire survey of 120 current users' in the United Arab Emirates (UAE), a leader in m-government development in the Arab world. The study employs advanced statistical techniques to test an extended the Technology Acceptance Model (TAM) by incorporating the determinants of trust, cost, social influence, variety of services, perceived usefulness in information technology and demographic profiles. The findings revealed that trust and social influence are positively associated with end users intention to adopt m-government services in the UAE. By identifying the predictors of users' adoption of m-government, this study provides several theoretical and practical implications related to m-government service adoption.

1. Introduction

Technology adoption is a growingly vital research theme, as new technologies continuously emerged. With the advances of technology, and in particular mobile technology, it has transforming the pattern of many governments deliver their services to its employees, citizens, businesses and other organisations through mobile government (m-government). On the basis of the concept given by the Organisation for Economic Co-operation and Development (OECD/ITU, 2011), m-government is an extension or evolution of electronic government (e-government), whereby the transactions of businesses, dissemination of information and services are conducted in a mobile environment through mobile devices for public service delivery (OECD/ITU, 2011). The opportunity presented by m-government are reflected by the growth of mobile phones. According to the International Telecommunication Union (ITU) statistical report, mobile subscribers will surpass 7 billion users worldwide in 2015 (ITU, 2015). The implementation of m-government initiatives has been reported as leading to such benefits for governments, citizens, business and economic growth as it may increase government efficiency, improve communications and data coordination, expand service delivery, improve levels of information sharing, precision and personalisation in targeting users and delivering content, greater cost optimisation, faster and wider wireless networks, stronger digital equality and increasing the productivity and effectiveness of public service personnel (Hung, Chang, and Kuo, 2013; OECD/ITU, 2011).

Research on m-government service adoption is still nascent in nature as past research has focused on electronic government (e-government) services acceptance (Lawson-Body, Illia, Willoughby, & Lee, 2014), ignoring mobile communication technology (Wang, 2014). The factors studied here may be of beneficial in explaining user acceptance of the services as rigorous empirical research of m-government adoption behaviour of citizens in the Arab world is still yet to emerge (Rodrigues, Sarabdeen, & Balasubramanian, 2016). One of the associated factors that a uniform e-strategy cannot be attained is the fact that each geographic location has its own characterised social, economic, cultural, and political cobweb, which predominantly shaped m-government technologies, technological institution, and temporal contexts that merely influenced entertained options and decisions about whether or not to adopt an innovation. This study is among the pioneer empirical research that focuses on end users' behavioural intention towards m-government services in the UAE. As the UAE has made tremendous progress in the development of m-government services recently (Gulf News, 2014), this study has significant implications for practices in the region, and for further research on an m-government adoption model that is robust across cultures. Therefore, studying the factors that explaining the adoption of m-government in the UAE is essential for understanding the potential of this technology in the Arab context, in general and UAE in particular.

This study made several important empirical and theoretical contributions to studies on information technology. First, it applied the Technology Acceptance Model (TAM) model to examine end users

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decisions to adopt m-government in a developing country, which has not been widely explored in the literature. Secondly, it added four variables, trust, cost, social influence and variety of services, into the TAM model, to have better understanding on the role of numerous variables on end users' behavioural intentions to adopt m-government. Thirdly, this study made contributions to the knowledge in this area by examining whether the effect of extended TAM factors on m-government might be moderated by gender, age and monthly household income of the end users. Finally, the results of this study will have implications for those who attempt to promote m-government services among UAE populations.

The remainder of this paper is organised as follows. Next section presents a review of relevant literature. This is followed by hypotheses development and proposed research model for this study. The research method section will then be presented. After that, findings are presented and discussed. In the last section, the paper identifies contributions, limitations, and areas for further study before drawing a conclusion.

2. Literature review

2.1. Mobile government service in the United Arab Emirates (UAE)

The UAE m-government services plan was announced and initiated by His Highness Shaikh Mohammad Bin Rashid Al Maktoum, Vice-President and Prime Minister of the country and Ruler of Dubai on May 22, 2013, to provide services to their citizens anytime, anywhere and in convenience way (Gulf News, 2014). The focus was to relocate customer service centers into every customer's device (Waqas, 2013). The purpose was to offer simple, highly efficient, transparent procedures to meet customers' needs and expectations (Sheikhmohammed.ae, 2013). The UAE is one of such country in the Arab world that is setting an example for dedication to the transition from e-government to m-government (Waqas, 2013). His Highness said, "*The government of the future works 24/7 and 365 days a year. A successful government is one that goes to the people and does not wait for them to come to it*" (Emirates 24|7, 2015a). The m-government initiative draws its strength from UAE's accomplishments related to infrastructure and economic development, its mobile phone market, and individual use. The UAE has one of the world's leading infrastructures in the field of communication, with the number of mobile phone subscribers reaching approximately 14 million, which is an average of two telephones per capita (Sheikhmohammed.ae, 2013). A report released at end of year 2014 by Euro monitor forecasts that the mobile platform in the UAE will see no slowdown in the coming years, and will keep increasing to 4.3 million devices by 2018 (Kippreport, 2015).

Regarding readiness, the UAE is ranked first among all Arab countries on the Networked Readiness Index (NRI), issued by the World Economic Forum, and twenty-third among all 143 countries assessed in 2015 (TRA, 2015). In terms of the NRI's individual indicators, the UAE ranked first among Arab countries in terms of business-to-consumer Internet use, the E-participation Index, Internet access in schools, secure Internet servers, software piracy rates, and percentage of software installed (TRA, 2015). Table 1 summarises UAE rankings in the Global Competitiveness Report.

There is robust online use of government services in the UAE (Al-Hubaishi, Ahmad, & Hussain, 2017). According to data from 2015, 38.1 per cent of services are accessible on the Web (Hassan, 2013), and another report indicates aggressive online use through smartphones (Hassan, 2013). Online use is catalysed by numerous, affordable data plans offered by two national telecom service providers (Hassan, 2013) namely Etisalat and Emirates Integrated Telecommunications Company (known as DU). The UAE government has been enthusiastic toward ensuring that all government in the seven emirates (Dubai, Abu Dhabi, Ras Al-Khaimah, Sharjah, Umm Al-Quwain, Ajman and Fujairah) and private projects work toward the transition of the online systems to m-government in a near future, which has been the biggest initiative of the UAE government. Thus, this adds to the reasons behind choosing UAE for this study.

Table 1
Key Finding for UAE Rank.

Indicators	Ranking
World ranking in Government procurement of advanced technology products	2
World ranking in quality of overall infrastructure	3
World ranking in burden of government regulation	3
World ranking in Foreign Direct Investment (FDI) and technology transfer (Investment bringing new technologies)	3
World ranking in mobile telephone subscriptions/100 population	6
World ranking in firm-level technology absorption	7
World ranking in availability of latest technologies	8
World ranking in individuals using internet	10
World ranking in mobile broadband subscriptions/100 population	11

Source: (TRA, 2015).

2.2. Factors affecting the adoption of m-government: technology acceptance model (TAM)

Many studies have proposed and examined various models to study the primary determinants of adoption and implementation of information technology (IT). One of the most commonly used model in the IT acceptance literature is Technology Acceptance Model (TAM) (Davis, 1989). The TAM was adapted from the Theory of Reasoned Action (TRA) (Fishbein and Ajzen, 1975) and was initially developed to examine technology adoption and use behaviours in the workplace context. Davis (1989) proposes that technology usage is determined by behavioural intention, which is affected by two key principles: perceived usefulness and perceived ease of use. Perceived usefulness is defined as *"the extent to which a person believes that using a particular technology will enhance her/his job performance"* (p. 320). Perceived ease of use is defined as *"the degree to which a person believes that using a technology will be free from effort"* (p. 320).

2.2.1. Perceived usefulness

The decision to adopt the technology depends on the degree individuals feel that using the technology will improve efficiency and work performance (Davis, 1989). Previous studies have examined the importance of perceived usefulness on retention behaviour (Park and Kim, 2013). Wang (2014) confirm that perceived usefulness has a positive effect on attitude toward m-government adoption. Likewise, Abdelghaffar and Magdy (2012) indicate that users' willingness to use m-government in Egypt is strongly influenced by their perception of its usefulness. So, the decision of users to adopt the m-government depends on the degree users believe that using the m-government will satisfies users with instrumental needs timely, personalised information and services in more convenient and easier way and helps users improve work efficiency and complete tasks in anytime and anywhere (Yuan, Archera, Connelly, & Sheng, 2010). Hence, the following hypothesis is stated:

H1: Perceived usefulness has a positive relationship with UAE users' decisions to adopt m-government

2.2.2. Perceived ease of use

In terms of perceived ease of use, researchers has demonstrated that there is direct and significant relationships between perceived ease of use and users' intentions to adopt a technology (Pan and Jordan-Marsh, 2010). As m-government is still relatively new to many users in the UAE, it would be therefore important to determine if they perceive m-government as being useful, easy to learn, or difficult to use, and whether this perception will lead to users' adoption decision. Although one may argue that m-government applications should therefore have a