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Mobile wallet inhibitors: Developing a comprehensive theory using an integrated model

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ABSTRACT

The concept of the mobile wallet is increasingly adopted in developed and developing countries for improving the scale, productivity, and excellence of banking services. Oman is one of the most growing countries of the Middle Eastern economies. Acceptance of mobile wallets in Oman is being hindered by various inhibitors. There is no study in the Middle Eastern countries that addressed the concerns of probable inhibitors influencing mobile wallet acceptance from expert's perspective. In this study, eleven key inhibitors to mobile wallet adoption are identified from the literature and expert's feedback. This study employed Interpretive Structural Modelling (ISM) in conjunction with fuzzy MICMAC to reveal the intricate relationship among inhibitors to mobile wallet acceptance. To the end, an integrated hierarchical model is developed to understand the influence of a particular inhibitor on others. 'Anxiety towards new technology', 'Lack of new technology skills', 'Lack of awareness of mobile wallet benefits' and 'Complexity of new technology' have been reported as key inhibitors to promote mobile wallets in Oman. This study also suggests several recommendations for banking organizations and policymakers in developing the effective model to popularize mobile wallets in Oman.

1. Introduction

The integration of Information and Communication Technology (ICT), payment methods and smartphones are providing new opportunities and mobile wallet is considered as one of these opportunities (Kapoor et al., 2015; Qin et al., 2017). Mobile wallet replaces the physical wallet and allows users to pay online by means of a mobile device at a merchant's location (Chen, 2008; Ramadan and Aita, 2018). This is considered as a big revolution in the digital world, which will replace the traditional wallets with multiple credit and debit cards. In today's era of the technology revolution, organizations have resolved the problems of speed, interactivity, and security of the first generation mobile technologies from the early 2000's. Today the online banking services offered by mobile channels are comparable to the Internet-based services offered through a personal computer (Akinci et al., 2004). Banking firms across the globe are investing in mobile technologies for reducing risk and cost, enhancing customer time- and place- convenience and achieving effective customization. At the same time mobile wallet is also receiving huge recognition, owing to the high penetration of mobile devices around the globe, for improving the scale, productivity and quality of banking services (Dwivedi et al., 2014; Dahlberg et al., 2015; Dauda and Lee, 2015; Faqih and Jaradat, 2015; Slade et al., 2015; Liébana-Cabanillas et al., 2017). The concept of making payment through mobile has achieved a mixed response in the market, so as it has been greatly influencing several factors, such as trust and security, technology reliability, among others (Dahlberg et al., 2008; Amoroso and Magnier-Watanabe, 2012; Slade et al., 2013). Payment through mobile devices allows customers to manage several scenarios, such as mobile commerce, customer-to-merchant commerce, merchant-to-merchant commerce among others. The understanding of mobile wallet inhibitors in Oman is quite important mainly because of a number of reasons: 1) Mobile devices penetration in Oman is quite higher compared to personal computers 2) personal computer-based internet provides anytime banking convenience, whereas mobile-based banking technologies provide anytime and anywhere banking options and 3) online banking technologies both internet and mobile are expected to be the banking industry's primary approach for improving customer base, reducing cost and risk, enhancing quality and

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personalization and may drive the competitive trends in the next decade. In 2011, Google has pointed out the importance of Google Wallet in its vision document "In the past few thousand years, the way we pay has changed just three times—from coins to paper money, to plastic cards. Now we're on the brink of the next big shift". And the next big shift is in the form of mobile wallet.

Mobile payments are increasing substantially in the Asia-Pacific countries. Capegemini (2017) reported that the total digital payments using mobile devices worldwide were recorded $500 billion in 2017 and $321 billion in 2016. In Gulf countries, Smartphone penetration has increased significantly in recent years and was observed 83% Smartphone adoption rate in the United Arab Emirates (UAE) alone and highest in the world. In the case of Oman, Smartphone adoption rate was 70% (GSMA, 2016). Furthermore, NCSI (2017) reported that the population of Oman was 4,642,521 in November 2017 and total mobile phone subscription was 6,975,757 which results in the penetration rate of the mobile phone in Oman is about 150%. Oman Observer (2017) reported that Bank Muscat, the leading bank in Oman has launched first mobile wallet, a state-of-the-art “cash on mobile” in mid of 2017. The introduction of mobile wallet which is a secure and convenient payment channel considered as an important step in the e-Government initiative of Oman. Furthermore, it does not store any personal information on the mobile phone, and hence, becomes more secure. The services provided by mobile wallet are available in both the English and Arabic languages, and mobile applications are easily downloadable at no cost. At present, Omani residents can avail mobile wallet facility with a maximum loaded money 300 Omani Rials ($780).

The mobile wallet is a comparatively novel area of investigation, relatively less investigated when compared to similar domains namely, e-commerce, m-commerce or phone banking, where investigation has been made extensively (Oliveira et al., 2016). Mobile payment is a relatively recent innovation in its early stages of development and growth, yet they are widely extended in our society (Dahlberg et al., 2015; Liébana-Cabanillas et al., 2017). Shaw (2014) reported that mobile wallet technology is growing, but has not yet been significantly exploited by retailers or consumers due to the existence of multiple inhibitors.

In recent years, the technologies are on the higher priorities in Gulf Cooperation Council (GCC) countries. In Oman, as there is a massive increase in the mobile users, but transactions using mobile devices are still very limited. A thorough understanding of inhibitors to the acceptance of mobile wallets in Oman is thus needed to develop mobile payment services efficiently. The rise of mobile banking may be seen as an innovative method of doing business in the Arab region, and so far, limited research has been undertaken on actual users from this region (Ramadan and Aita, 2018). There is no study in the Middle Eastern countries that addressed the concerns of key inhibitors influencing mobile wallet acceptance from the user's perspective. The key research question to be addressed in the present study is "what are the key inhibitors that influence the decision of using a mobile wallet by users".

This research seeks to address the following objectives:

i. To identify inhibitors of the acceptance of mobile wallets in Oman perspective;
ii. To investigate the contextual relationships between the identified inhibitors;
iii. To categorize identified inhibitors based on their dependence and driving power;
iv. To generate an integrated model to understand the dynamics of inhibitors for eradicating these inhibitors and encouraging mobile wallets in Oman.

This research aims to identify the mobile wallet inhibitors and explores how these are interlinked. A methodical literature review and feedback from known experts were utilized to precisely identify the mobile wallet focused inhibitors in Oman. To analyze these inhibitors, the Interpretive Structural Modelling (ISM) approach integrated with fuzzy MICMAC was employed. The ISM method helps to know the relationships within a set of factors in a system (Sage, 1977; Janssen et al., 2017). Therefore, we attempted to employ ISM to develop a theory for understanding inhibitors to the acceptance of mobile wallets in Oman. Further, fuzzy MICMAC provides a deeper explanation of the relationships between identified inhibitors. The ISM-MICMAC has limited capability of revealing the hidden relationship, so as it does not offer a facility of incorporating some in-between value for evaluating the power of inter-relationship among the factors (Khan and Haleem, 2015). The amalgamation of ISM and fuzzy MICMAC enhances the understanding and segregation of the inhibitors (Sindhu et al., 2016). These are classified as driving, linkage, dependence and autonomous forms of inhibitors. Finally, this research suggests several noticeable implications to help users and policymakers in bank organizations in developing a thorough understanding and effective implementation of mobile wallet in Oman.

The remainder of this article is arranged as follows: Section 2 provides the related literature on mobile wallet concepts and identification of inhibitors to the mobile wallet. Section 3 describes a solution methodology. Data analysis and related results are presented in Section 4. Discussion of the research findings with implications for practice is provided in Section 5. Finally, Section 6 provides research conclusions, limitations and the scope for future research.

2. Literature review

This section covers the literature on mobile wallet concept, identifies the key inhibitors to mobile wallets acceptance and highlights the gaps in the research.

2.1. Mobile wallet concept and related models

The mobile wallet is the latest mode of m-commerce that allows users to make transactions, online shopping, bookings and share the available services. A user needs to have a mobile device or any device compatible with mobile communication networks, to conduct mobile payments (Au and Kauffman, 2008). Mobile wallet could also be understood as the second revolution followed by e-wallet concepts. In this sense, organizations in developed nations, such as in Japan, enables both the mobile and electronic options to users to complete their payment (Amoroso and Magnier-Watanabe, 2012). In addition, the mobile wallet has become the current buzzword in the telecom industry, due to a rapid increase in the information and communication technology and exponential increase in numbers in mobile phone users (Au and Kauffman, 2008). In general, secure mobile wallet involves four functions: (1) generation of user identity and verification for authenticity, (2) various options for making financial transactions, (3) provision of for making m-commerce transactions, and (4) security provisions.

Researchers have adopted a number of models like Diffusion of innovation (DOI) theory (Rogers, 1995; Zhao and de Pablos, 2011), Theory of Reasoned Action model (Ajzen and Fishbein, 1988), Theory of Planned Behavior model and TAM (Davis et al., 1989; Madden et al., 1992), TAM3 (Faqih and Jaradat, 2015), Unified theory for acceptance and use of technology (UTAUT) (Venkatesh et al., 2003; Dwivedi et al., 2017) among others. However, Venkatesh et al. (2012) argued that the commonly adopted/modified TAM has a number of limitations related to acceptance of the advanced technology. Zhao and de Pablos (2011) suggested that innovation is a vital component influencing the acceptance of a new technology. Furthermore, Faqih and Jaradat (2015) investigated the implementation of mobile commerce in Jordan and developed a theoretical framework based on the TAM3. The findings suggested that ‘perceived usefulness’ and ‘perceived ease of use’ are significant elements in elucidating the users’ intention to accept mobile commerce. Oliveira et al. (2016) identified the key determinants of mobile payment acceptance combining the strengths of UTAUT2 and