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Research Note

Determining factors in the adoption and recommendation of mobile wallet services in India: Analysis of the effect of innovativeness, stress to use and social influence

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ABSTRACT

Potential for the use of mobile wallet is enormous and it is drawing attention as an alternative mode of payment worldwide. The present research aims to provide important insights into the TAM (Technology Acceptance Model) and UTAUT2 (Unified Theory of Acceptance and Use of Technology) models. This study develops a conceptual model to determine the most significant factors influencing user's intention, perceived satisfaction and recommendation to use mobile wallet. The research model included 206 responses from an online and manual survey in India. Our study tested the moderating effect of innovativeness, stress to use and social influence on user's perceived satisfaction and recommendation to use mobile wallet services. We found that ease of use, usefulness, perceived risk, attitude, to have significant effect on user's intention, which further influenced user's perceived satisfaction and recommendation to use mobile wallet services. We also determined the significant moderating effect of stress to use and social influence on user's perceived satisfaction and recommendation to mobile wallet services. This study provides an integrated framework for academicians to measure the moderating effect of psychological, social and risk factors on technology acceptance. It can also help practitioners by identifying important factors affecting user's decision, which further affects user's perceived satisfaction and recommendation to use mobile wallet services.

1. Introduction

With the increase in demand of digital and cashless transactions worldwide, user's attitude related to mobile payment and its adoption has undergone a drastic change (Alalwan, Dwivedi, & Rana, 2017; Leong, Hew, Tan, & Ooi, 2013). Researchers have widely used the concept and explored various aspects of mobile payment services, which is considered a universal payment solution for both end-users and merchants, and affects behavioural intention and usage of a technology (Alawan et al., 2017; Ramos de Luna et al., 2019; Slade, Dwivedi, Piercy, and Williams 2015a). Various studies have confirmed that consumers prefer a technology that provides fast, convenient and useful services on a single platform. In this regard, mobile payment services denote an advanced multipurpose technique that includes such features (Abhishek & Hemchand, 2016; Schierz, Schilke, & Wirtz, 2010; Shin, 2009; Thakur & Srivastava, 2014). Mobile payments mean any payment service carried out through a mobile device. There are several types of mobile payment services available, both for remote and physical payments (Ramos de Luna, Liébana-Cabanillas, Muñoz-Leiva, & Sánchez-Fernández, 2019). First, we have point of sales services such as near-field communication (NFC) payments, sound waves-based payments, which provide a channel for credit/debit card transactions from the customer bank to retailers through a secured portal (Liébana-Cabanillas, Marinkovic, Luna, & Kalinic, 2018). Second, we have both in-store and remote payment technologies such as mobile wallets (m-wallet) and quick response (QR) code (Liébana-Cabanillas, Ramos de Luna, & Montoro-Ríos, 2015). M-wallet on the one hand, is a technology that needs to be installed in the smartphone and allows customers to store money and do online transactions directly from the wallet whereas QR code works through a few banking apps, store apps to integrate debit/credit card details (Madan & Yadav, 2016; Singh, Srivastava, & Sinha, 2017). Apart from these services, we have a few remote payment services such as internet payments, SMS, mobile banking etc. (Sorensen, 2018).

In the current study, our main objective is to understand factors that are relevant to measure m-wallet usage and perceived satisfaction in an

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Indian context. There is rapid increase in the use of m-wallets for various payment services (Liébana-Cabanillas, Marinković, & Kalinić, 2017; Liébana-Cabanillas et al., 2018; Patel, 2016). Recent data shows that India had approximately 1 billion mobile phone users and 530 million smartphone users in 2018 as compared to 240 million users the previous year. Moreover, approximately 300 million are internet users and half of them make payment through mobile payment systems like m-wallet (Jamwal, 2017). Gartner (2015) shared that there are more than 200 mobile wallet systems operating across the world and half of the consumers use mobile payment technology through various bank services worldwide. This may be due to visible shifts in consumer education, social status and awareness about the use of m-wallet services (Amoroso & Watanabe, 2012; Oliveira, Thomas, Baptista, & Campos, 2016). M-wallet transactions have increased to 325.2 million (38%) in 2018 as compared to 235.5 million transactions in 2017. Total amount transacted in mobile wallets increased to Rs. 15,202 crores from Rs. 6934 crores (119%) in 2017 (Gupta, 2018). Government offers several incentives and discounts to customers for using digital mode of payments. Waiver in service taxes up to 15% on transactions worth INR 2000, cash backs and rewards points on transactions are a few of them.

However, though adoption of technology began in interoperable manner, it is still not at the full scale that is necessary for usage and adoption of payment systems in India. Despite several benefits, the value of digital transactions is low; customers prefer cash and physical access to various transactions, which they feel is missing in digital mode of payment (see Fig. 1). Low awareness about technology, its benefits and usefulness are the main hurdles; consumers perceive less or no value to go digital (Jaisinghani, 2017). Moreover, there are some other issues which pose barriers to the intention to use mobile payment services such as lack of information about product usefulness and usage, privacy norms, low awareness, resistance, innovativeness, infrastructural support and interoperability issues (Oliveira et al., 2016). India set up the Unique Identification Authority of India (UIDAI), known as Aadhaar number, for the country. Aadhaar creates a single point to link all people digitally across the country, which is very useful for banks to trace the overflow of customer information shared around the internet. This helps to promote and support the aim of digital India and financial inclusion. However, it is not clear how secure user's privacy is in Aadhaar and other linked wallet applications such as BHIM, UPI etc. Security is another concern for the consumer while making payments through mobile applications (Apanasevic, Markendahl, & Arvidsson, 2016; Madan & Yadav, 2016). Consumer is worried about information leaks and public sharing of personal information while doing transactions digitally (Hossain, Quaresma, & Rahman, 2019). To overcome such barriers and increase usage of m-wallets, research studies proposed several key factors that may influence the intention and continued usage of mobile payments services (Rana et al., 2015). Various technology adoption models, TAM (Technology Acceptance Model) and UTAUT2 (Unified Theory of Acceptance and Use of Technology), confirmed that ease of use, usefulness,

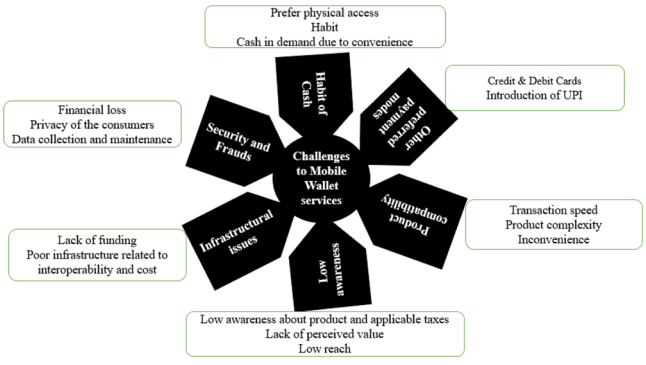

Fig. 1. Overview of payment systems in India. Source: Authors compilation.

attitude, perceived trust, subjective norms are some significant factors, which have significant influence on user's intention and eventually on continued usage of technology (Dwivedi et al., 2017a,b).

The novelty of the present research is twofold; on the one hand, the TAM and UTAUT models are expanded by introducing new variables for an emerging country like India, and on the other hand, the moderating effect of three variables (innovativeness, stress to use and social influence) is introduced with the aim of verifying their influence on perceived satisfaction and recommendation to use mobile wallet services (De Albuquerque, Diniz, & Cernev, 2016). This study shows that consumers are benefiting and becoming conscious with mobile payment services and their usefulness (Bhasker, 2016; Shaw, 2014). Consumers find mobile payments a multipurpose solution that is easy to use, satisfactory and time saving. Several previous studies confirmed that consumer's perceived satisfaction is directly associated with behavioural intention and continued usage of a technology (Koivisto & Llrbaczewski, 2004; Liébana-Cabanillas et al., 2019; Sharma & Sharma, 2019). Consumers experience perceived satisfaction based on their pre-use expectations and actual performance of a technology. When users are satisfied with features of mobile payment technology such as improved convenience, offers, cashbacks and reward points, they plan to switch to digital mode of payments (Oliveira et al., 2016; Reuver, Verschuur, Nikayin, Cerpa, & Bouwman, 2015). Consumer's perceived satisfaction works in several ways through continuous usage of a service and intention to recommend to family and friends on various social platforms (Kizgin, Jamal, Dey, & Rana, 2018; Marinković & Kalinić, 2017; Xu & Du, 2018; Zolkepli & Kamarulzaman, 2015). Oliveira et al. (2016) have shown that a user who has a good experience and perceived satisfaction with a technology, is often more inclined to share positive feedback and recommendations to others. We have several studies which consider user's post adoption behaviour (Bhattacherjee, 2001; Groß, 2016); however, we have limited studies on m-wallet usage where constructs such as perceived satisfaction and recommendation are reviewed in an Indian context (Miltgen, Popovic, & Oliveira, 2013). Recommending a technology like m-wallets offers several benefits to firms, since consumer's usage may increase with social pressure, and recommendation of family and friends to choose a technology (Liébana-Cabanillas, Munoz-Leiva, & Sánchez-Fernandez, 2015; Oliveira et al., 2016; Xu & Du, 2018; Zolkepli & Kamarulzaman, 2015). Reychav et al. and Lee, Lee, & Yoo (2000) opined that users would ask their social networks and consider the opinion from friends and family prior to choosing a technology for payments. Previous studies have reviewed some factors of user's usage and user's perceived satisfaction with m-wallet technology. However, association between these constructs can be further studied and more factors can be considered to measure user's continued intention and usage. The present study provides a comprehensive analysis of multiple factors that may directly and indirectly influence user's usage, perceived satisfaction and recommendation to use mobile wallet technology.

We divided the study into six parts. The first part comprises introduction and rationale of the study. Second part includes theoretical background, various influencing factors, the conceptual model and hypotheses development. The third part explains research methodology and data collection procedures. The fourth part contains hypotheses testing and results. Fifth part explains discussion, theoretical and practical contributions. Sixth part includes conclusions, limitations and future scope of the study. Finally, there is a list of references used in the study.

2. Theoretical framework: consumer mobile behavior

Researchers have widely used TAM (Technology Acceptance Model) and UTAUT2 (Unified Theory of Acceptance and Use of Technology) models to measure behavioural intention and satisfaction of users (Amoroso & Watanabe, 2012; Duarte, Silva, & Ferreira, 2018; Oliveira et al., 2016; Thakur & Srivastava, 2014; Upadhyay & Chattopadhyay,