

A Literature Review of Factors for Adoption Intention of Mobile Wallets

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Abstract

Not only in urban areas (as per RBI: population above 1 lakh and less than 10 lakh) but also in semi-urban areas (as per RBI: population above 10,000 and less than 1 lakh) of India, the ownership and the use of smartphones has increased dramatically and has become an essential part of daily life. Due to political developments/trends and technology advancement, mobile users can nowadays use their smartphones to make money transaction or payment by using applications installed on the phone. When smartphones can function as virtual wallets, it is called 'Digital Wallet' or also known as 'Mobile Wallet'. Mobile wallets are designed to replace the current physical wallet, with its coins, notes, photos, loyalty cards, plastic cards, etc.

This study tries to identify the factors influencing mobile wallets (m-wallets) adoption intention by systematically reviewing the literature concerning major attributes and models of technology acceptance specifically in semi-urban areas. This paper proposes a conceptual model which states important insights for researchers and practitioners in the context of acceptance of mobile wallets in semi-urban areas of India.

Key Words: Mobile Wallets, Technology Acceptance

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Introduction:

After the drastic change of the Digitalization millions of people have started to use the mobile wallets to do the day to day transactions. Mobile wallets have been widely adopted by the people and are considered the biggest innovation in the field of technology. Mobile wallet is evolved from a concept called "Digital Wallet". In 1996, Sam Pitroda (founder and creator) registered the patent of 'Digital wallet' in the United States of America (USA). Pitroda S. and Desai M (2010) defined "Digital wallet would consist of a liquid crystal display not much bigger than a regular plastic bank card, which preferably a touch-sensitive screen and simple user interface that lets the user flip through the digital wallet, in the same manner, he/she flips through a leather wallet." In Non-Confidential GSMA White Paper (GSMA, 2012) 'Mobile Wallet' was described as "A software application on a mobile handset that functions as a digital container for payment cards, receipts, loyalty cards, tickets, vouchers and other items that might be found in a conventional wallet. The mobile wallet enables the user to manage a broad portfolio of mobile NFC [Near Field Communication] services from many different companies."

In November 2016, Demonetization took place, in which Rs 500 and Rs 1000 notes were banned and cash flow in the market was unbalanced for a few months. Demonetization generated growth opportunity for digital payments in India and the digital wallets companies grabbed the opportunities to expand their market shares. According to Statista (2019) in 2006, the number of mobile wallet transactions was only 0.6 billion which is increasing in 2019 by 17 billion and which is further assume to increase by 260 billion by the end of 2022.

Objectives:

1. To study the factors that influence consumer adoption of mobile wallets (m-wallets).
2. To identify the factors influencing mobile wallets (m-wallets) adoption intention in a semi-urban area.

Research questions:

1. What are the factors influencing the adoption of mobile wallets among people of semi-urban area?
2. What are the key attributes of mobile wallet affecting intention to use behaviour?

Research Methodology:

1. Research Design: Exploratory Research Design
2. Data Collection: Secondary data

Exploratory research was conducted to get insights about factors affecting adoption intention on digital wallets.

Literature Review:

In India as well as in abroad, numerous empirical and exploratory research studies have been previously conducted on the topic of mobile payment adoption intention of users. In all the studies conducted previously, the main focus was on various matters such as risk, fraud, safety, use method, a new method of m-payment, intentions to use, etc. To describe the important factors influencing technology adoption intention various models are available i.e. the technology acceptance model (TAM) (Davis, 1989), the unified theory of acceptance and use of technology (UTAUT) (Venkatesh et al., 2003), the technology-organization and environment framework (Tornatzky and Fleischer, 1990), the theory of reasoned action (Fishbein and Ajzen, 1975), the theory of planned behaviour (Ajzen, 1991) and the diffusion of innovations theory (Roger, 1995).

TAM signifies that a belief-attitude-intention-behaviour relationship is responsible for user's technology acceptance behaviour (Davis, 1989). Venkatesh et al. (2003) extended UTAUT through review past models and theories of user adoption intention-behaviour which including IDT and TPB on the base of criticisms of the imminent capability of TAM (Technology acceptance model) (e.g., Agarwal & Prasad, 1998). Shin et al. (2009) extended the TAM by using perceived security, social influence, and trust factors affecting mobile wallet acceptance behaviour. Chandra et al. (2010) extended TAM and considered the Trust factor to measure the adoption of m-payments as a most

significant factor. Kim et al. (2010) found that perceived usefulness (PU), perceived ease of use (PEOU), personal innovativeness (PI), and m-payment knowledge, mobility, reachability, and convenience significantly influenced m-payment adoption behaviour. In India, Amit Shankar & Biplab Datta (2018) adopted TAM model and extended the model by using various independent variables, trust, (PI) personal innovativeness, (PU) perceived usefulness, perceived ease of use (PEOU), subjective norms (SN), and self-efficacy (SE) and as the dependent variable behavioural intention (BI) to adopt m-payment. This study found that perceived ease of use (PEOU), perceived usefulness (PU), trust, and self-efficacy (SE) were significantly and positively affected mobile payment adoption intention in India. There was no significant influence on m-payment adoption intention of subjective norms (SN) and personal innovativeness (PI) both in India.

Venkatesh et al. (2012) extended the UTAUT and that model is known as UTAUT2 for the research study. The UTAUT 2 model consists of some new factors which have been Price value, Hedonic motivation, and Habit, also be affecting the technology acceptance behavior. DeSenaAbrachão, Moriguchi, and Andrade (2016) utilized UTAUT (Unified Theory of Acceptance and Use of Technology) where there was a significant positive effect of social influence (SI), effort expectation (EE), and performance expectation (PE) and the negative effect of Perceived risk (PR) on the intention of adoption of mobile payment.

Pousttchi and Wiedemann (2007) observed that performance expectancy, effort expectancy, facilitating conditions and social influence were significant factors that influencing the intention to use behaviour in the mobile payment system. Mallat (2007) a qualitative research study observed that relative advantage, trust, and compatibility have a significant positive influence on behavioural intention to adopt the mobile payment system. Zhou (2011) found that perceived ubiquity, perceived security, and perceived ease of use (PEOU) a significant positive influence on the trust factor and a significant direct effect of trust on usage intention in China.

Yang *et.al.* (2012) observed that social influence, perceived risk, personal innovativeness, and relative advantage factors have significantly affected the intention to adopt mobile payment services users of China. Perceived Usefulness (PU) and perceived ease of use (PEOU) have been found the most significant determinants of users' adoption the intention in most of the research studies (Chen, 2008; Kim et al., 2010; Peng, Xiong & Yang, 2012). Keramati, Taeb, Larijani, and Mojir (2012) explain that compatibility, ease of use, skills, usefulness, subjective norms, trust, cost, payment habit and convenience significantly influence mobile payment adoption intention where cultural, as well as demographic variables, play a vital role on mobile payment services adoption behaviour. Al-Jabri and Sohail (2012) studied the effect of Relative Advantage, Complexity (C), Compatibility, Observability, Trialability and Perceived risk in Mobile banking adoption and observed that perceived risk (PR), relative advantage and observability the significantly and positively influence on mobile banking adoption intention. Furthermore, in 2014, Liébana-Cabanillas observed in their study that trust, ease of use, costs, usefulness, risk, and external influences these factors were significantly influencing attitudes and usage intentions of mobile payment systems. Arvidsson (2014) TAM (Technology Acceptance Model) and DOI (Diffusion of Innovation) model observed that PEOU (perceived ease of use), PU (Perceived Usefulness), relative advantage positively affected mobile payment services adoption intention. Ting, Yacob, Liew, and Lau (2016) adopted the TPB model (Theory of Planned Behavior) and found that subjective norms, attitude, and perceived behaviour significantly affected mobile payment adoption intention in China as well as in Malaysia. Shaw (2018) noticed that relative advantage, compatibility, perceived risk, complexity and users' absorptive capacity significantly affected the continued use of intention-behaviour and smartphone addiction the most important determinant which affected continued intention to use behaviour. Situational variables like physical surroundings, social surroundings, temporal perspective, task definition, and antecedent states were also taken into consideration in the study.

From the previous research studies noticed that there is still a need for further research in the era of m-payment adoption intention behaviour-related research studies. Utmost

research studies have been performed in the earlier stages and required extensive research studies in the field of mobile payment adoption intention behaviour-related research studies (Dahlberg et al., 2008). There have been quite a few research studies particularly in a rural area and semi-urban or semi-rural areas in India on the intention of adoption of mobile payment and mobile wallet. There is still a need for further research studies on m-payment as well as mobile wallet adoption intention-behaviour of people in rural and semi-urban areas in India.

Details for Variables previously studied having impact on mobile payment adoption Intention

Variables	Significant effect	Not Significant
PEOU(Perceived ease of use)	Thakur, 2013; Shaw, 2014; Shin, 2009; Chen, 2008; Shankar & Dutta, 2018; Schierz, 2009; Kim, 2010; Zmijewska et al., 2007; Aldás-Manzano et al., 2009; Cheong et al., 2004; Lin, 2011;Shih & Chen, 2008	Akturan &Tezcan, 2012; Püschel et al., 2010; Wessels & Drennan, 2010; Yang, 2005; Zhang et al., 2012.
PU(Perceived Usefulness)	Thakur, 2013; Shaw, 2014; Shin, 2009; Chen, 2008; Shankar & Dutta, 2018; Schierz, 2009; Kim, 2010; Zmijewska et al., 2007; Akturan & Tezcan, 2012; Aldás-Manzano et al., 2009; Cheong et al., 2004; Schierz et al., 2010; Shih & Chen, 2013; Wessels & Drennan, 2010; Yang, 2012; Yang, 2005; Zhang et al., 2012.	
Social influence(SI)	Thakur,2013; Slade,2015; Madan & Yadav,2016; Oliveira,2016; Shin,2009; Pousttchi & Wiedemann, 2007; Yang, Lu, Gupta, Cao, & Zhang, 2012;de Sena Abrahão, Moriguchi and Andrade,2016; Al-Jabri and Sohail,2012	
FC(Facilitating conditions)	Thakur,2013; Slade,2014; Oliveira,2016; Cheong et al., 2004 Madan & Yadav,2016; Lai & Lai, 2010; Yang, 2010; Morosan and DeFranco,2016; Pousttchi & Wiedemann, 2007	Brown et al., 2003
PR(Perceived risk)	Shaw,2018; Slade,2014;Al-Jabri and Sohail ,2012; Brown et al., 2003; Chen, 2008; Kapoor et al., 2013; Koenig-Lewis et al., 2010; Lu et al., 2011; Luo et al.2010; Riquelme & Rios, 2010; Shin, 2010; Sripalawat et al., 2011; Wu & Wang, 2005; Yang et al., 2012 Zhang et al., 2011	de Sena Abrahão, Moriguchi and Andrade,2016; Thakur,2013; Madan & Yadav,2016; Ozkan et al.,2010; Peng et al., 2011; Huang & Liu, 2012; Suoranta, 2003; Wang & Yi, 2012
Hedonic motivation	Morosan and DeFranco,2016; Slade,2014; Venkatesh et al., 2012	Oliveira,2016
Relative advantage	Shaw,2018 ; Brown et al., 2003; Kapoor et al., 2013; Kim et al.,2009; Lu et al., 2011; Yang et al., 2012; Suoranta,2003; Mallat,2007	
Perceived cost(PC)	Chong, 2013; Chong et al., 2012; Peng et al.,	Koenig-Lewis et al., 2010; Yang

	2011; Lu et al., 2011; Luarn & Lin, 2005; Sripalawat et al., 2011; Wei et al., 2009; Wessels & Drennan, 2010; Wu & Wang, 2005; Yang et al., 2012; Yu, 2012; Zhang et al.,2012	et al.,2012
Habit(H)	Keramati, Taeb, Larijani and Mojir,2012; Morosan and DeFranco,2016; Slade,2014	
Complexity(C)		Mallat,2007; Al-Jabri and Sohail ,2012; Brown et al., 2003; Kapoor et al., 2013; Shaw,2018; Suoranta, 2003
Trust(T)	Madan & Yadav,2016; Shaw,2014; Shin,2009; Slade,2014; Kumar,2018; Ozkan et al.,2010; Shankar & Datta,2018; Huang & Liu, 2012; Koenig-Lewis et al., 2010; Lu et al., 2011; Gu et al., 2009	Luo et al., 2010; Chandra et al., 2010; Cho et al., 2007
Personal innovativeness (PI)	Shaw,2018; Thakur,2013; Slade,2014; Shankar & Datta,2018; Kim et al., 2010; Yang, 2005; Zhang et al., 2012; Yang, Lu, Gupta, Cao, & Zhang, 2012; Oliveira,2016	Kim et al., 2010

Perceived Ease of Use (PEOU):

According to Davis (1989), ease of use can be defined as the degree of beliefs that using a particular technology will be effortless. There are several studies found PEOU (perceived ease of use) as an essential determinant that affecting m-payment adoption intention behaviour (Apanasevic et al.,2016; Dahlberg et al., 2008; Duane et al., 2014; Kim et al., 2010; Schierz et al., 2010; Viehland& Leong,2010).Thus, the following hypothesis:

H₁: Perceived ease of use positively influences the behavioural intention to adopt mobile wallets.

Perceived Usefulness (PU):

Perceived usefulness (PU) can be defined as “the prospective user’s subjective probability that using a specific application system will increase his or her job performance within an organizational context.” (Davis, Bagozzi and Warshaw, 1989).In the different research studies, the PU(perceived usefulness) was empirically tested and

found a significant positive determinant of new technology adoption intention (Apanasevic *et al.*, 2016; Arvidsson, 2014; Chen, 2008; Duane *et al.*, 2014; Keramati *et al.*, 2012; Kim *et al.*, 2010). Thus, the following hypothesis:

H₂: Perceived usefulness positively influences the behavioural intention to adopt mobile wallets.

Social Influence (SI):

Venkatesh *et al.* (2012) defined social influence as "the extent to which consumers perceive that important other (e.g., family and friends) believe they should use a particular technology". SI shows that adoption intention-behavior affected by the environmental factors like as opinions of a user's friends, relatives, and superiors (Venkatesh *et al.*, 2003).

H₃: Social influence positively influences the behavioural intention to adopt mobile wallets.

Facilitating Conditions (FC):

Venkatesh *et al.* (2012) described facilitating conditions as "the consumers' perceptions of the resources and support available to perform a behaviour" (*ibid.*, p. 159). When using mobile apps, set of favourable facilitating conditions available then it will be driven to greater intention to use behaviour (Chopdar, P. *et al.*, 2018).

H₄: Facilitating conditions positively influences behavioural intention to adopt m-wallets.

Hedonic Motivation (HC):

Hedonic motivation (HM) can be defined as "the fun or pleasure derived from using technology" (Oliveira *et al.*, 2016). Hedonic motivation is observed to be a significant positive effect on technology adoption intention to use (Venkatesh *et al.*, 2012).

H₆: Hedonic motivation positively influences the behavioural intention to adopt mobile wallets.

Price Value (PV):

Venkatesh et al. (2012) defined price value as "consumers' cognitive trade-off between the perceived benefits of the applications and the monetary cost for using them". When the benefits derived from adopting or using the technology are greater/more than the cost incurred, at that time price value positively affected the user behaviour (Chopdar et al.,2018).

H₇: Price value positively influences the behavioural intention to adopt mobile wallets.

Habit (H):

Habit is explained as "consumer's repeated behaviour due to learning"(Venkatesh et al., 2012). Habit proved as a contributor to behaviour intention to use Information technology in past research studies (Lankton et al., 2010; Aarts and Dijksterhuis, 2000).

H₈: Habit positively influences behavioural intention to adopt m-wallets.

Complexity (C):

"Complexity is defined as the extent of complication which an innovation possesses in its understanding and usage" (Rogers, 1969, pg. 283). In the research studies of Liebana-Cabanillas *et al.* (2014) and Martins *et al.* (2014) found that there is a significant negative influence of complexity on the behaviour of intention to use.

H₉: Complexity negatively influences behavioural intention to use m-wallets.

TRUST (T):

Trust is a subjective belief that a party will satisfy its obligations (Lu et al., 2011). Trust can be considered as the consumer's assurance that their money, as well as personal information, will not be misused.

H₁₀: Trust positively influences the behavioural intention to adopt mobile wallets.

Innovativeness (I):

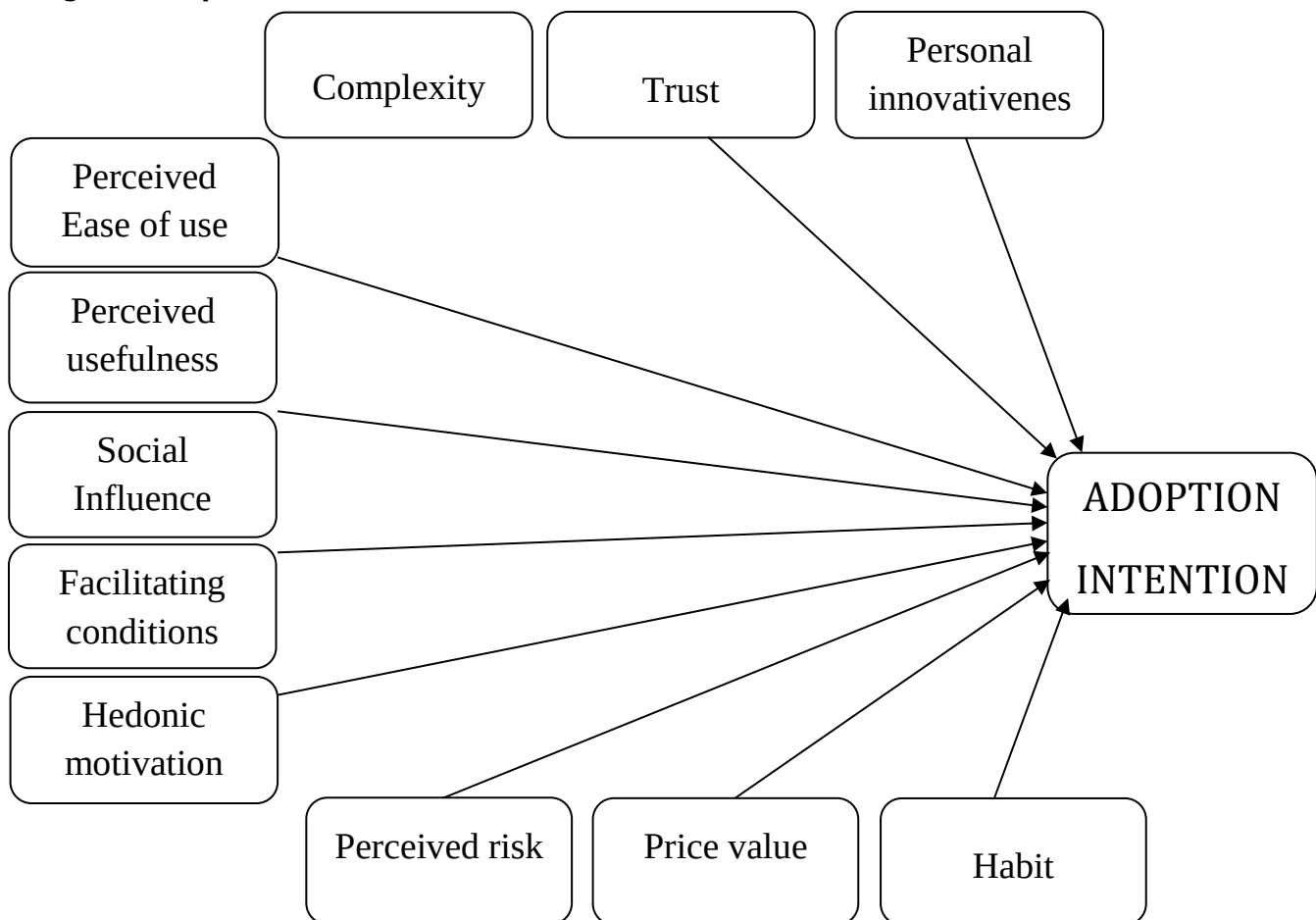
"Innovativeness defined as the readiness of an individual to try a concept, product or service that is new in the connection of their experience"(Rogers, 1995). Aldás-Manzano

et al. (2009) found that innovativeness to be the most significant positive determinant of behavioural intention to use. Thus, the following hypothesis:

H₁₁: Innovativeness positively influences the behavioural intention to adopt mobile wallets.

Findings:

Figure1: Proposed Model



Conclusion:

This paper provides a model which can be used in future studies to the researcher and practitioner. The proposed model in this study can be used in semi-urban area perspective research studies of adoption intention behaviour. Hence, this paper combined existing m-payment adoption knowledge through a systematic review of the important research for exploring the theories and determinants already used in order to

suggest a model for the investigation of consumer m-payment adoption. Though, the variety of additional determinant could be further increased by future research. This study totally based on the past review of the literature and in the area of m-payments concern with the semi-urban area.

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