Factors influencing adoption of payments banks by Indian customers: extending UTAUT with perceived credibility

Kriti Priya Gupta, Rishi Manrai and Utkarsh Goel

Abstract
Purpose – The purpose of this paper is to investigate the factors influencing the behavioral intention to adopt payments banks services by Indian underbanked and unbanked population.

Design/methodology/approach – The proposed model has assimilated factors from the Unified Theory of Acceptance and Use of Technology (UTAUT) along with perceived credibility. The factors of UTAUT include performance expectancy, effort expectancy, facilitation of conditions and social influence. Apart from testing the direct relationships of the model constructs with the behavioral intention to adopt payments banks services, the study has also explored mediating and moderating effects of certain constructs. The research model has been empirically tested using 660 responses from a field survey conducted in New Delhi – the capital city of India – by using the structured equation modeling (SEM) technique. The target respondents of the study are small businessmen and migrant laborers who are either underbanked or unbanked.

Findings – The findings of the study reveal that the model is able to explain 67.5 per cent of the variance in behavioral intention. The results indicate that all the factors are direct determinants of behavioral intention. Perceived credibility is found to be the strongest influencer of behavioral intention. The findings also indicate that perceived credibility partially mediates the relationships between “social influence and behavioral intention” and “performance expectancy and behavioral intention.” The relationship between performance expectancy and behavioral intention is also found to be moderated by facilitating conditions and effort expectancy.

Research limitations/implications – As this study is based on a convenience sample of respondents of only one city of India, this could negatively reflect on the generalizability of results across other cities. Moreover, the study has only focused on the perceptions of small businessmen and migrant laborers. This raises concerns regarding the applicability of the results for other segments of the current population that have different demographic characteristics (e.g. occupation, income, education level and technology experience). Modifying the conceptual model presented in this research to include “experience” and “age” as moderators can also be worth considering in future. Although this study has extended the UTAUT to include perceived credibility, the results of the explanatory power of the model indicate that there is still room for improvement. Therefore, including other constructs, e.g. hedonic motivation, perceived risks and trialability, could be a fruitful path forward. Future studies may also examine the factors influencing the actual use behavior of payments banks, rather than just behavioral intention.

Practical implications – The study looks forward to providing the payments banks service providers in India with suitable guidelines for effectively implementing and designing payments banks services. Specifically, the results of this study have provided clues for Indian payments banks service providers about the crucial role of perceived credibility in influencing the behavioral intention to adopt payments banks. Therefore, service providers have to initially be sure that payments banks are able to conduct financial transactions efficiently, securely and within less time, along with the availability of information required by customers to successfully use the services. Service providers should enhance customer confidence and trust by providing secure and reliable services. They should also emphasize on the positive safety measures of the payments banks during any marketing campaign rather than just creating brand awareness.

Kriti Priya Gupta is based at Management Studies, Symbiosis Center for Management Studies, Noida, Uttar Pradesh, India. Rishi Manrai is based at the Symbiosis Center for Management Studies, Noida, Uttar Pradesh, India. Utkarsh Goel is based at Management Studies, Indian Institute of Information Technology Allahabad, Allahabad, Uttar Pradesh, India.
Originality/value – The study represents a substantial contribution to the existing knowledge regarding mobile payment channels in particular and technology acceptance area in general. In fact, this study presents a worthwhile direction by examining payments banks services, which, so far, have not been well evaluated in the Indian context. To the best of the authors’ knowledge, this is an early attempt toward a holistic and integrative approach to explain adoption of payments banks in India. Although prior studies have addressed mobile banking and mobile payment adoption, the strength of this research lies in combining the UTAUT constructs with perceived credibility. This is evidenced by the high explanatory power (67.5 per cent) of the research model adopted in this study.

Keywords UTAUT, Mobile financial services, Behavioural intention, Indian unbanked customers, Payments banks

Paper type Research paper

1. Introduction

The banking and financial industry has shown remarkable growth worldwide in the recent past, both in terms of volume and complexity (Leeladhar, 2006). However, it has been found that the banking sector outreach varies across countries (Beck et al., 2007). Only half of the adult population in developing countries – precisely 54 per cent – has access to bank accounts, compared to a whopping 94 per cent in OECD countries (Demirguc-Kunt et al., 2015). There are several factors that constrain traditional bank usage in developing countries. First, bank accounts tend to be expensive because of yearly maintenance fees and other non-pecuniary opening costs (Beck et al., 2008). Second, traditional banking is associated with several disadvantages, such as long transaction queues, long-distance bank branches and short or changeable operating hours (Dupas et al., 2012). Third, consumers may be too poor to generate sufficient financial savings to bear the transaction costs (Bachas et al., 2016).

The advancements in mobile technology in banking and payment industry has introduced a range of new functionalities in numerous mobile financial services (MFS), such as bank account transfers, Peer to Peer (P2P) transfers, auto bill payments and proximity-based payments at the point of sale. Traditional banks and other non-bank entities, which earlier had problems in providing gainful banking services through customary channels to underprivileged clients, acknowledge MFS as a form of ‘branchless banking’ (Ivatury and Mas, 2008), which reduces the costs of providing service to low-income customers. Consequently, banks introduced multiple service access techniques through various delivery channels, such as automatic teller machine (ATM) and Web and mobile phones (Laukkanen & Pasanen, 2007). MFS has transformed the global financial and banking industry in the past few years as it provides added convenience to existing bank customers in developed markets and offers new services to the underbanked or unbanked customers in emerging markets. Governments in developing countries see MFS as a vehicle to achieve financial inclusion, especially among their rural and poor population.

In India, access to banking services is limited in remote and rural areas, and 40 per cent of the country is outside the ambit of formal banking (Venkataramakrishnan, 2016). The reason behind this limited access is that citizens live too far from the nearest financial services institutions, and the cost of using these services is high. With the intention of ensuring higher financial inclusion by increasing the reach of the financial and banking services, the Government of India (GoI) is promoting MFS in the country through mobile banking, PPIs (pre-paid instruments or e-wallets) and payments banks. Although mobile banking and PPIs have been in use in India for quite some time, payments banks is a relatively new concept. Payments banks is a modern initiative of the GoI, which was launched in 2014 based on the concept of Kenya’s payments bank M-Pesa (Mas and Morawczynski, 2009). Payments banks are basically stripped-down versions of banks, which can be promoted by existing non-bank PPI cos, non-banking finance companies, mobile operator companies and/or supermarket chains, and can deliver services such as “acceptance of demand deposits, issuance of ATM/debit cards, payments and remittance services through various channels,
distribution of non-risk sharing simple financial products like mutual fund units and insurance products” (RBI, 2014). The objective of these banks is to increase the penetration level of financial services in remote areas of India by focusing on migrant labor workforce, low-income households and small businesses. They are expected to enhance the financial inclusion in India by providing banking services to the underbanked and unbanked people. Being unbanked means “not having any type of mainstream bank account,” which means that the unbanked people rely on uncontrolled informal financial services for credit, saving deposits and payment services. Underbanked refers to either “limited frequency of use of a bank account” or “limited access to bank services.” Underbanked persons use their bank accounts rarely, or they have limited access to mainstream financial services.

The biggest challenge for the payments banks in India is convincing the customers that it is a worthy substitute to traditional banks. As payments banks services are accessed through mobile phones; therefore, just like any new technology-based financial service, “technical issues, perceived risks, lack of trust and security concerns are generally found to be the major reasons behind customers’ resistance to adopt such services” (Koening–Lewis et al., 2010; Laukkonen et al., 2007; Brown et al., 2003; Zhou, 2012), whereas “value added services and perceived monetary and non-monetary benefits are found be the factors which motivate the users to use these services” (Taylor and Todd, 1995; Lee, 2009; Oliveira et al., 2014; Alalwan, 2017). Therefore, it is necessary to explore and understand the needs and social patterns of the customers so that appropriate steps can be taken to optimize their experience with payments banks. Moreover, the acceptance rates of mobile-based banking and financial services have not been able to reach the estimated level, especially in the developing countries where customers show low interest toward these services (Püschel et al., 2010; Zhou, 2012; Lin, 2011, 2013; Hanafizadeh et al., 2014; Alalwan et al., 2016). Especially, Indian customers are reluctant to adopt mobile-based payment channels (Thakur and Srivastava, 2013).

Previous studies have enhanced the understanding of the main factors responsible for the adoption of mobile banking and mobile payment in various non-Asian countries, such as Iran (Hojjati and Rabi, 2013), Turkey (Akturan and Teczan, 2012), Jordan (Alalwan et al., 2017), Portugal (Oliveira et al., 2016) and Lebanon (Tarhini, et al., 2016). A few researchers have also examined the mobile banking and mobile payment acceptance behavior in Asian countries, such as in Taiwan (Lee, 2009), Singapore (Riquelme and Rios, 2010), Malaysia (Tan and Lau, 2016) and the Philippines (Chiu et al., 2017). Recently, Madan and Yadav (2016) and Deb and Agrawal (2017) examined the factors influencing the adoption of mobile wallets and mobile banking in India. However, as payments banks are in the premature stage of implementation in India, very few studies have been able analyze the related issues of this technology (Kohli and Patel, 2016; Abid, 2017; Ernst & Young, 2016; Goel and Manrai, 2016) and no such study is available so far that can empirically examine the adoption behavior of prospective customers for the payments banks services.

Bearing in mind the fact that in many developing countries such as India, where a big segment of the population is underbanked or unbanked and operation of payments banks is at a very nascent stage, it becomes motivating to understand the rationality of the factors already explored and to explore any supplementary factor(s) that might be significant for adoption of payments banks services. Although there exists a number of studies toward ascertaining the factors influencing the adoption of online banking, mobile banking and mobile payment, most of these studies are based on the opinions of the population having sufficient access to existing traditional ways of banking services. Moreover, “the perspective of the underbanked and unbanked people had been overlooked in most of the existing studies” (Dass and Pal, 2011).

Hence, the present study aims to fill this gap by empirically examining the most significant factors that could affect the Indian underbanked and unbanked customers’ intentions to adopt payments banks services.
2. Literature review

Payments banks in India is a new concept and there is little research in the area in comparison to associated areas of research such as internet banking (Lee, 2009; Hanafizadeh et al., 2014; Tarhini et al., 2016), mobile banking (Luarn and Lin, 2005; Zhou, 2012; Oliveira et al., 2014; Alalwan et al., 2017) and mobile payment (Leong et al., 2013; Slade et al., 2014; Tan et al., 2014; Dahlberg et al., 2008; Oliveira et al., 2016), where ample research has been conducted. Therefore, the theoretical framework of this study is borrowed from the related areas of information systems (IS) and information technology (IT) adoption concerning internet/online banking and mobile payments and banking. Researchers have used many models in the past to study the various factors that impact customers’ choices to adopt/use internet/online banking, mobile banking and mobile payments: the theory of planned behavior (TPB) (Ajzen, 1991); the innovation diffusion theory (IDT) (Rogers, 2003); the technology acceptance model (TAM) (Davis, 1989); the unified theory of acceptance and use of technology (UTAUT) (Venkatesh et al., 2003); and the decomposed theory of planned behavior (Püschel et al., 2010) etc.

The UTAUT, developed by Venkatesh et al. (2003), provides a unified theoretical basis for facilitating research on IS/IT adoption. The UTAUT has resulted from the synthesis of eight prominent theories and models in the IS/IT adoption research: theory of reasoned action, TPB, TAM, motivational model (MM), combined TPB and TAM, Diffusion of innovations (DOI) theory, model of perceived credibility (PC) utilization (MPCU) and social cognitive theory (SCT). The theory condenses 32 variables found in these eight models into four exogenous variables – “effort expectancy” (EE), “performance expectancy” (PE), “social influence” (SI) and “facilitating conditions” (FC) – two endogenous variables – “behavioral intention (BI) to use technology” and “use behavior” – and four moderators – “gender,” “age,” “experience” and “voluntariness.” The UTAUT is proposed to be superior as it is able to explain 70 per cent of the variance, while the earlier theories explain only 30-40 per cent variance in the adoption behavior (Venkatesh et al., 2003). The UTAUT postulates that “the four core constructs i.e. PE, EE, SI, and FC are direct determinants of IS/IT BI and ultimately actual use behavior” (Venkatesh et al., 2003). The UTAUT serves as a comprehensive model that can be applied across a range of applications and has been proved to be a valid tool to predict the adoption behavior in various technology-based systems (Tarhini et al., 2016). Owing to its simplicity, parsimony and robustness, UTAUT is one of the most widely used models (Yuen et al., 2010; Venkatesh et al., 2012; Tarhini et al., 2016) and is proved to outperform other prevalent models (Venkatesh et al., 2003).

According to Yu (2012) and Khraim et al. (2011), UTAUT is one of the most powerful models for investigating the factors affecting the technology adoption decision of mobile banking services.

Various researchers have used the UTAUT to examine how customers form perceptions and intentions and what influences their behavior toward mobile banking or mobile payment. Using an extended UTAUT model, Alam (2014) has concluded that an individual intention to adopt mobile banking is significantly influenced by SI, PE, EE, FC and perceived financial cost. Alalwan et al. (2017) have combined the constructs of UTAUT and trust in their study and concluded that customers’ BI to use mobile banking is significantly and positively influenced by PE, EE, FC and trust. Oliveira et al. (2016) have combined UTAUT with IDT and showed that “compatibility, perceived technology security, PE and SI have significant direct and indirect effects over the adoption of mobile payment.”

Although the UTAUT, its extensions and its integration with several other constructs have allowed several scholars to explain technology adoption, “there is still need for a systematic investigation of salient factors that apply to a customer context which is voluntary in nature” (Venkatesh et al., 2012). Moreover, as UTAUT was originally developed in an organizational
context (Venkatesh, 2003), its explanatory power may be limited while explaining adoption of technology by users in a voluntary context (Tarhini et al., 2016; Oliveira et al., 2016).

For studying the BI of customers to adopt payments banks services, there are some other factors that should be considered, such as the customers’ perceptions regarding trust, security and risk associated with these services, i.e. PC. Extending the UTAUT through inclusion of this factor would result in the development of a more comprehensive model of factors for studying the customers’ BI to adopt technology in the context of payments banks services. Many researchers have showed that lack of PC makes the customers “reluctant in carrying out financial transactions online” (Yousafzai et al., 2010; Kesharwani and Bishit, 2012; Tarhini et al., 2016). “Trust plays very significant role when users with less or no prior experience consider the adoption of an innovative service” (Kim and Prabhakar, 2004; Kim et al., 2009). Zhou (2012) reinforced the significant role of a bank’s repute, service quality and system quality in determining the customers’ behavior toward mobile banking and its adoption.

3. Conceptual model and hypothesis

Shen et al. (2010) have opined that consumer acceptance of a new technology is a complicated phenomenon and requires more than a single model. Jackson et al. (2013) have also argued that “an integrative approach provides unique insights that can’t be achieved with a single theory model.” Therefore, the present study combines the constructs of UTAUT with PC for better understanding of the users’ behavior regarding adoption of innovative payments banks services. In the original UTAUT proposed by Venkatesh et al. (2003), FC has not been considered as a direct determinant of BI, rather it has been taken as a determinant of actual usage behavior. The present study has not examined the actual usage behavior as most respondents of this study are users who have not yet tried or used payments banks services as these services have been newly introduced in India. Hence in contrast to what was suggested by Venkatesh et al. (2003), the present study proposes FC along with the other constructs of UTAUT i.e. PE, EE, and SI, as direct determinants of customers’ BI to adopt payments banks services.

According to previous literature on mobile-based banking and mobile payment, PC has been found as a critical factor that determines customers’ perceptions and intentions to accept such technology (Amin, 2008; Tarhini et al., 2016). Past research has found that trust and security issues play a significant role in the willingness of users to engage in online financial transactions owing to high uncertainty and perceived financial and security risks (Luo et al., 2010; Zhou, 2011; Hanafizadeh et al., 2014). Additionally, as mobile payment involves sensitive financial information, “security concerns can become a barrier to technology adoption” (Duane et al., 2014). Therefore, PC has been included in the research model to accurately examine customers’ behavior toward adopting payments banks services.

3.1 Perceived credibility

According to Erdem and Swait (2004), PC is defined as “the belief that a partner is trustworthy and has the required expertise to carry out transactions.” Wang et al. (2003) have defined PC as “the degree to which a potential user believes that the service will be free of security and privacy threats.” In the context of mobile banking, “lack of perceived credibility leads to consumers’ worries that their personal information and/or money might be transferred to someone else without their knowledge” (Luarn and Lin, 2005). Past research suggests that PC has a significant positive influence on the customers’ BI to adopt online banking (Wang et al., 2003; Yuen et al., 2010; Tarhini et al., 2016) and mobile banking (Luarn and Lin, 2005). Previous research also indicates that people refuse to adopt mobile banking and mobile payment because of security issues and lack of PC and trust.
Brown et al., 2003; Amin, 2003; Daniel and Jonathan, 2013). The rationale behind including PC as a determinant of BI is that customers cannot assess the transactional condition in payments banks services as in the case of personal interaction with bank officials of traditional banks. Moreover, Tarhini et al. (2016) argued that “integrating PC into the UTAUT offers better prediction of customers’ behavioural intention.” Therefore, the following hypothesis is formulated:

\[ H1. \text{ Perceived credibility positively impacts the behavioral intention to adopt payments banks services} \]

3.2 Performance expectancy

The root constructs underlying PE are relative advantage (from IDT), perceived usefulness (from TAM), job fit (from MPCU), extrinsic motivates (from MM) and outcome expectations (from SCT). PE is “the degree to which using a technology will provide benefits to consumers in performing certain activities” (Venkatesh et al., 2012).

PE has been found to be a key factor for a user to accept online banking (Tarhini et al., 2016), mobile banking (Alalwan et al., 2017) and mobile payments (Oliveira et al., 2016). “Customers seem to be more motivated to use and accept new technology if they perceive that this technology is more useful in their daily lives” (Venkatesh et al., 2003; Alalwan et al., 2016). In the context of mobile banking, Brown et al. (2003) have empirically demonstrated that the greater the performance expectancy, the more likely is the intention to adopt mobile banking. Zhou et al. (2010) have concluded that “the customers’ intention to use mobile banking is significantly predicted by the performance expectancy.” The BI to adopt payments banks services may therefore be affected by individual’s perception that using these services will help him/her to attain gains in performing payment tasks. Hence, a positive influence of PE on BI is hypothesized in the present study. Additionally, PC may influence the relationship between PE and BI. According to Oliveira et al. (2016), apart from being a direct determinant of BI, PE is a significant predictor of initial trust. Hence, trust is a mediator of the relationship between PE and BI. Therefore, the following hypothesis is postulated:

\[ H2. \text{ Perceived credibility partially mediates the positive impact of performance expectancy on the behavioral intention to adopt payments banks services.} \]

3.3 Effort expectancy

EE is “the degree of ease associated with consumers’ use of technology” (Venkatesh et al., 2003). EE contributes to “an accurate prediction of intention to adopt a new technology” (Miltgen et al., 2013). As the nature of payments banks services is such that it requires a minimum level of knowledge, skill and effort, EE may play a significant role in influencing the customers’ intent to use this technology. Several authors have confirmed the influence of EE on the consumer’s intent to use mobile banking and mobile payment (Gu et al., 2009; Riquelme and Rios, 2010; Oliveira et al., 2014; Alalwan et al., 2017). The effect of a similar construct to EE, perceived ease of use has also been found important on BI by several researchers (Lee, 2009; Yoon and Steege, 2013). If users feel that using payments banks services is easy and does not necessitate great effort, they further intend to adopt the same. Therefore, the study articulates the following hypothesis:

\[ H3. \text{ Effort expectancy positively influences the behavioral intention to adopt payments banks services.} \]

3.4 Facilitating conditions

FC is “the degree to which an individual believes that an organizational and technical infrastructure exists to support the use of the system” (Venkatesh et al., 2003). Mobile
banking and mobile payment technologies usually need a certain kind of resources and infrastructure (Alalwan et al., 2016; Zhou et al., 2010; Oliveira et al., 2016). Therefore, customers could be more motivated to use mobile banking/mobile payment if they have a certain level of support service and resource (Alalwan et al., 2016; Zhou et al., 2010; Oliveira et al., 2016). Oliveira et al. (2016) examined the impact of FC on the BI to adopt mobile payment technology, but they failed to support the impact. However, the impact of facilitating settings on the actual usage behavior toward using mobile-based banking services has been stressed by various mobile banking and mobile payment studies (Zhou et al., 2010; Oliveira et al., 2014; Alalwan et al., 2016; Alalwan, et al., 2017; Yu, 2012). Hence, this study suggests the following hypothesis:

H4. Facilitating conditions have a positive impact on the behavioral intention to adopt payments banks services.

3.5 Social influence

SI is characterized as “the extent to which an individual perceives that important others believe he or she should apply the new system” (Venkatesh et al., 2003). In other words, the information and assurances given by the persons around customers (e.g. friends, family members, colleagues and superiors) could impact the customers’ awareness and the intention of adopting technology (Yu, 2012; Zhou et al., 2010; Oliveira et al., 2016; Alalwan, et al., 2017). SI is selected as a key determinant of BI because the customers will be influenced by the uncertainty associated with an innovative service, such as payments banks, which will force them to discuss with people in their societal network and consult regarding their decision to adopt. Further, as relationships are seen as a vital aspect of society in Indian context, the prospective customers of payments banks may be influenced by their friends and family. Hence, the study hypothesizes a positive effect of SI on BI. Moreover, besides directly influencing BI, SI may also affect PC as the influence of friends or family members may form the perceptions regarding the credibility/image of the service provider. Therefore, to check any mediating effect of PC on the relationship between SI and BI, the study formulates the following hypothesis:

![Figure 1 Proposed model](image-url)
Perceived credibility partially mediates the positive effect of social influence on the behavioral intention to adopt payments banks services.

The research model depicting the hypothesized relationships is shown in Figure 1.

4. Research method

4.1 Measurement

A survey was conducted in the capital city of India, i.e. New Delhi, for testing the proposed constructs and model. For this survey, a structured questionnaire was prepared with the help of items and constructs taken from previous literature (Appendix). Measurement items for EE, PE, FC, SI and BI were adapted from Venkatesh et al. (2012) and Belanger and Carter (2008); items for PC were adapted from Yu (2012); Amin (2008); Daniel and Jonathan (2013) and Oliveira et al. (2014). A seven-point Likert scale was used for measuring each item, which had a range from 1 (totally disagree) to 7 (totally agree). Age and gender as indicators of demographics were also included. The questionnaire was created in English and reviewed for content validity by language experts. The English version of the instrument was also translated into Hindi by a professional translator as the questionnaire was being administered in India. Reverse translation into English was also carried out for the questionnaire to confirm translation equivalence, as suggested by Brislin (1976). The pilot test was carried out with a sample of 30 subjects during March-April 2017 to pre-test the survey instrument. The respondents of the pilot testing were small shopkeepers, domestic servants and auto/taxi drivers, who were not included in the main survey. The results of pilot testing confirmed that the scales were dependable and valid. Data collected from the pilot test were not used in the final phase to avoid skewing of the result.

4.2 Data

As the study focuses on analyzing the perceptions of underbanked and unbanked people regarding the acceptance of payments banks in India, the target respondents of the study are small business men and migrant laborers who are either underbanked or unbanked. The study has taken both underbanked and unbanked people in the sample as they differ from fully banked customers and share common characteristics such as lower incomes, poor educational background, lack of willingness to take financial risks, higher likelihood to use alternative financial service providers, and so on. Previous studies on adoption of MFS (Dass and Pal, 2011; Dennehy and Sammon, 2015) have also included underbanked and unbanked customers together in a single sample.

A total of 400 small businessmen, including fruits and vegetable sellers and small shopkeepers, and 500 migrant laborers, including taxi drivers, auto drivers, rickshaw drivers and domestic maid servants, working in various parts of New Delhi, were surveyed using convenience sampling during March-April 2017. Before administering the questionnaires, the respondents were briefed about the functionality and services of the payments banks. A total of 660 valid responses (including 366 responses from small business men and 294 responses from migrant laborers) were received, which accounted for a response rate of 66 per cent. Out of the total respondents, 55.45 per cent of the respondents were small businessmen and 44.54 per cent respondents were migrant laborers; 73.52 per cent respondents were male and 26.48 per cent of the respondents were female. The age of the respondents ranged from 18 to 66 years, and the average age was 34 years.

4.3 Normality

The univariate normality for all the variables was tested using skewness-kurtosis approach (Hair, et al., 2010; Byrne, 2010). The statistical values of kurtosis and skewness of all the
variables were computed using SPSS and were found inside their critical levels. As stated in Table I, all the values of skewness are under the cut-off point of 3, and the kurtosis values are below their cut-off point of 8 (West et al., 1995; Kline, 2011).

### 4.4 Structural equation modeling analysis

The collected data were further analyzed using two-stage SEM approach. The two-stage approach begins with the measurement model to test the reliability and validity of the instrument and then estimates the structural model (Anderson and Gerbing, 1988; Schumacker and Lomax, 2010). All the constructs of the UTAUT and PC were first put through the measurement model and then the structural model. However, an analysis of the structural model was also carried out by including only the UTAUT constructs, excluding the PC. The conduct of this procedure was essential to examine how the predictive power of the model could be different with and without PC.

### 4.5 Measurement model

The indicator reliability, construct reliability, convergent validity and discriminant validity were checked to evaluate the measurement model. A confirmatory factor analysis using AMOS software was done to initially study and later assess the fit of the measurement model (Arbuckle, 2009). The study adopted the “maximum-likelihood method to estimate the model’s parameters where all analyses were conducted on variance-covariance matrices” (Hair et al., 2010).

#### 4.5.1 Model fitness

The study evaluates “the main fit indices including $\chi^2$/DF, AGFI, GFI, NFI, CFI, RMR and RMSEA” (Hair et al., 2010; Kline, 2011) for the model fitness. As one of these indices (Goodness of Fit Index [GFI]) did not reach its threshold value and the value of $\chi^2$ was significant ($\chi^2 = 1675.649$, df = 413, $p = 0.000$), further purifications and
reassessments were done to ensure that the data and the model were a good fit (Bagozzi and Yi, 1988; Anderson and Gerbing, 1988; Byrne, 2010). Essentially, many criteria were followed in a refinement process to improve the model’s fitness, including examination of standardized regression weights (factor loadings), standardized covariance matrix and modification indices (Byrne, 2010; Hair et al., 2010). A few indicators (PC1, PC3 and SI4) were deleted from the initial measurement model on the basis of the standardized regression weights to enhance the model fitness. Table II presents the modification indices of the initial and the final measurement models. The table clearly shows that in the final measurement model, all fit indices are in the suggested range apart from the point that chi-square was significant ($X^2 = 887.942$, df = 253, $p = 0.000$).

4.5.2 Construct reliability and validity. As recommended by Hair et al. (2010), “reliability, convergent validity and discriminant validity can be assessed by using Cronbach’s alpha, composite reliability (CR), and average variance extracted (AVE).” As shown in Table III, all the constructs have Cronbach’s alpha values above the cut-off point of 0.70 (Nunnally, 1978) and the CR values within their recommended levels of 0.70 (Hair et al., 2010). Hence, all the constructs exhibit sufficient reliability. Moreover, the convergent validity for all the constructs is ensured as the range of AVE values of the constructs is 0.583 (BI) to 0.761 (PC), which are “above the cut-off value of 0.50” Hair et al. (2010) (Table II). Moreover, as seen in Table IV, “as all the constructs have the squared root of AVE higher than their intercorrelation estimates with other corresponding constructs which indicates that the constructs illustrate sufficient discriminant validity” (Gupta et al., 2018).

4.6 Structural model

The goodness of fit of the structural model was assessed with the same criteria as used for measurement model, and the results were found to indicate good fit of the data. Although the chi-square was significant ($X^2 = 762.14$, df = 195, $P = 0.000$), the other fit indices were

<table>
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<tr>
<th>Table II</th>
<th>Results of measurement model</th>
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<tbody>
<tr>
<td>Fit index</td>
<td>Recommended value</td>
</tr>
<tr>
<td>$X^2$</td>
<td>NS at $p &lt; 0.05$</td>
</tr>
<tr>
<td>df</td>
<td>N/A</td>
</tr>
<tr>
<td>$X^2$/df</td>
<td>&lt;5</td>
</tr>
<tr>
<td>GFI</td>
<td>&gt;0.90</td>
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<tr>
<td>Adjusted GFI (AGFI)</td>
<td>&gt;0.80</td>
</tr>
<tr>
<td>Comparative fit index (CFI)</td>
<td>&gt;0.90</td>
</tr>
<tr>
<td>Normed fit index (NFI)</td>
<td>&gt;0.90</td>
</tr>
<tr>
<td>Root mean square residuals (RMR)</td>
<td>&lt;0.10</td>
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<td>Root mean square error of approximation (RMSEA)</td>
<td>&lt;0.08</td>
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<th>Table III</th>
<th>Constructs reliability and convergent validity</th>
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<tr>
<td>Construct</td>
<td>Cronbach’s alpha</td>
</tr>
<tr>
<td>PC</td>
<td>0.890</td>
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<tr>
<td>PE</td>
<td>0.927</td>
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<tr>
<td>EE</td>
<td>0.839</td>
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<tr>
<td>SI</td>
<td>0.872</td>
</tr>
<tr>
<td>FC</td>
<td>0.880</td>
</tr>
<tr>
<td>BI</td>
<td>0.860</td>
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</table>
inside their respective critical values: $X^2/df = 3.908$, GFI = 0.904, AGFI = 0.875, CFI = 0.949, NFI = 0.933, RMR = 0.078 and RMSEA = 0.066.

All the causal paths proposed in the conceptual model path were found to be significant in coefficient analyses (Figure 2). The results of the path coefficients are shown in Table V. It can be observed that PC ($\beta = 0.300$, $p < 0.001$), PE ($\beta = 0.181$, $p < 0.001$), EE ($\beta = 0.187$, $p < 0.01$), FC ($\beta = 0.280$, $p < 0.001$) and SI ($\beta = 0.137$, $p < 0.05$) had a significant positive impact on BI to use payments banks services, with PC having the strongest association with BI. As for the predictors of PC, both the variables, i.e. PE and SI, were found to have a significant effect on PC (Table V). As the direct influence of PE and SI were also found to be significant, PC was found to have partial mediating effects on the relationships between "PE

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**Table IV  Discriminant validity**

<table>
<thead>
<tr>
<th></th>
<th>PC</th>
<th>PE</th>
<th>EE</th>
<th>SI</th>
<th>FC</th>
<th>BI</th>
</tr>
</thead>
<tbody>
<tr>
<td>PC</td>
<td>0.872</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PE</td>
<td>0.441</td>
<td>0.871</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EE</td>
<td>0.594</td>
<td>0.418</td>
<td>0.794</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SI</td>
<td>0.627</td>
<td>0.385</td>
<td>0.495</td>
<td>0.866</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FC</td>
<td>0.585</td>
<td>0.507</td>
<td>0.448</td>
<td>0.509</td>
<td>0.847</td>
<td></td>
</tr>
<tr>
<td>BI</td>
<td>0.711</td>
<td>0.573</td>
<td>0.622</td>
<td>0.613</td>
<td>0.682</td>
<td>0.763</td>
</tr>
</tbody>
</table>

---

**Table V  Path coefficients**

<table>
<thead>
<tr>
<th>Path</th>
<th>Un-standardized path coefficient</th>
<th>Standardized path coefficient</th>
<th>Critical ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>PC $\rightarrow$ BI</td>
<td>0.197</td>
<td>0.300</td>
<td>6.878***</td>
</tr>
<tr>
<td>PE $\rightarrow$ E; BI</td>
<td>0.215</td>
<td>0.181</td>
<td>4.488***</td>
</tr>
<tr>
<td>EE $\rightarrow$ BI</td>
<td>0.190</td>
<td>0.187</td>
<td>4.516***</td>
</tr>
<tr>
<td>SI $\rightarrow$ BI</td>
<td>0.116</td>
<td>0.137</td>
<td>2.837**</td>
</tr>
<tr>
<td>FC $\rightarrow$ BI</td>
<td>0.264</td>
<td>0.280</td>
<td>6.346***</td>
</tr>
<tr>
<td>PE $\rightarrow$ PC</td>
<td>0.421</td>
<td>0.233</td>
<td>6.200***</td>
</tr>
<tr>
<td>SI $\rightarrow$ PC</td>
<td>0.667</td>
<td>0.518</td>
<td>13.107***</td>
</tr>
</tbody>
</table>

**Notes:** $^*p < 0.05$; $^{**}p < 0.01$; $^{***}p < 0.001$
and BI” and “SI and BI.” Therefore, all the hypotheses H1-H5 were supported. Moreover, the $R^2$ value extracted in BI indicated that all the UTAUT factors along with PC jointly accounted for 67.5 per cent variance in BI. The $R^2$ value extracted in PC was 42.4 per cent.

An analysis of structural model, excluding PC and PBN, was also conducted. The UTAUT without PC was able to predict about 65.8 per cent of variance in BI. The inclusion of PC with the UTAUT constructs enhanced the $R^2$ value to 67.5 per cent. Consequently, it can be inferred that the proposed structural model has more prediction power of BI, once PC is included with the UTAUT constructs.

Though the inclusion of PC indicated an improved model, the effect of PE on BI was found to be surprisingly weak as compared to other constructs of UTAUT, namely, EE and FC. This finding was contradictory to the findings of previous studies (Oliveira et al., 2014; Oliveira et al., 2016), which indicated a very strong impact of PE on BI in the context of mobile payments and mobile banking. Hence, we tried to explore the moderating effects of FC and EE on the link between PE and BI to investigate the strength of this relationship in more detail. The literature also suggests inclusion of moderating variables to reduce or strengthen the relationship between variables (Baron and Kenny 1986; Sekaran and Bougie, 2009).

We conducted multi-group analysis (Wong et al., 2011) for testing the moderating effects of FC and EE on the relationship between PE and BI. We created two group models by splitting the data into low and high FC, and low and high EE samples, based on the median values of FC and EE (Byrne, 2010). The low and high FC groups consisted of 251 and 409 cases, respectively, whereas low and high EE groups consisted of 219 and 441 cases, respectively. Following the recommendations of Hair et al. (2010), we first tested the model for each group separately and found the fit indices to be acceptable. Then we tested the model for group invariance (Byrne, 2010). As demonstrated in Table VI, the comparison of unconstrained models with the constrained models for both variables FC and EE revealed statistically significant results, indicating that both FC and EE moderated the causal effect of PE on BI.

Further, the results pertaining to standardized parameter estimates (Table VII) suggested that the effect of PE on BI was more pronounced in high FC ($\beta = 0.229, p < 0.01$) and high

### Table VI  Tests of multi-group invariance

<table>
<thead>
<tr>
<th>Variable</th>
<th>Model description</th>
<th>$\chi^2$</th>
<th>df</th>
<th>$\Delta \chi^2$</th>
<th>$\Delta$df</th>
<th>Statistical significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low FC</td>
<td>Unconstrained</td>
<td>174.835</td>
<td>83</td>
<td>63.005</td>
<td>1</td>
<td>Significant</td>
</tr>
<tr>
<td></td>
<td>Constrained</td>
<td>237.840</td>
<td>84</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High FC</td>
<td>Unconstrained</td>
<td>236.923</td>
<td>83</td>
<td>103.692</td>
<td>1</td>
<td>Significant</td>
</tr>
<tr>
<td></td>
<td>Constrained</td>
<td>340.615</td>
<td>84</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low EE</td>
<td>Unconstrained</td>
<td>195.818</td>
<td>83</td>
<td>47.288</td>
<td>1</td>
<td>Significant</td>
</tr>
<tr>
<td></td>
<td>Constrained</td>
<td>243.106</td>
<td>84</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High EE</td>
<td>Unconstrained</td>
<td>270.660</td>
<td>83</td>
<td>109.014</td>
<td>1</td>
<td>Significant</td>
</tr>
<tr>
<td></td>
<td>Constrained</td>
<td>379.674</td>
<td>84</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Table VII  Moderation test using multi-group analysis

<table>
<thead>
<tr>
<th>Path</th>
<th>Low FC Standardized $\beta$ coefficient</th>
<th>Low FC p-value</th>
<th>High FC Standardized $\beta$ coefficient</th>
<th>High FC p-value</th>
<th>Low EE Standardized $\beta$ coefficient</th>
<th>Low EE p-value</th>
<th>High EE Standardized $\beta$ coefficient</th>
<th>High EE p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>PE → BI</td>
<td>0.201</td>
<td>0.013</td>
<td>0.229</td>
<td>0.000</td>
<td>0.242</td>
<td>0.013</td>
<td>0.254</td>
<td>0.000</td>
</tr>
</tbody>
</table>
EE groups ($\beta = 0.254, p < 0.01$). Moreover, the effect of PE on BI was not found to be significant in case of low FC ($\beta = 0.201, p > 0.01$) and low EE groups ($\beta = 0.242, p > 0.01$). Hence, it can be inferred that FC and EE fully moderate the relationship between PE and BI.

5. Discussion

The main objective of this study was extension of UTAUT by integrating PC to investigate the antecedents of the customers’ intentions to adopt payments banks services in India. Unlike the previous studies (Zhou et al., 2010; Yu, 2012; Alalwan et al., 2016), which explored the influence of FC construct on the actual use of mobile payment/banking (and not on the behavioral intent to adopt the same), the present study investigated the influence of FC on the BI of customers to adopt payments banks services. Our findings support the ability of all the constructs of UTAUT to explain the BI of customers to adopt payments banks services. By including PC along with the UTAUT constructs, the model explains 67.5 per cent of the variance in BI, which supports the inclusion of PC as an external factor in the conceptual model. Apart from exploring the direct effects of FC and EE on BI, the study also examined the moderating effects of FC and EE on the relationship between PE and BI.

The study has found that PC is the strongest determinant within the proposed model, with a coefficient value of 0.3. This confirms the important role of PC in motivating the underbanked and unbanked customers to adopt a new service, such as payments banks. People are more willing to adopt a new technology-based banking/financial service when there is credibility in the service provider and there is assurance against security and privacy risks. This could be because financial transactions conducted through electronic channels are sensitive in nature (Eriksson et al., 2005; Riffai et al., 2012). These results are in sync with results of prior studies on mobile banking and mobile payment studies regarding the role of PC (Gefen et al., 2003; Luarn and Lin, 2005; Amin, 2008; Yu et al., 2012; Zhou, 2012; Daniel and Jonathan, 2013; Hanafizadeh et al., 2014; Tarhini et al., 2016). Though mobile payment customers may feel a strong confidence in their banks, they lack trust in technology and are apprehensive of using mobile payments as channels for financial transactions (Kesharwani and Bisht, 2012). Moreover, as the underbanked and unbanked customers have a poor educational background, they are more anxious about the technology and feel that they may commit mistakes while doing electronic financial transactions such as transferring money to a wrong account or losing their money (Tarhini et al., 2016). Hence, the role of PC is of great importance in defining the customers’ intention to adopt MFS.

Further, PC is found to be significantly influenced by PE and SI, with SI having the stronger magnitude than PE. The significant positive impact of SI on PC indicates that the opinions of family, relatives and friends influence the customers’ perceptions regarding the credibility of payments banks. If people in the social circle of an individual think positive about the payments banks then they will develop a positive image and will be more likely to adopt the payments banks services. The finding that PE has a significant impact on PC is in harmony with the findings of Oliveira et al. (2014), linking PE and trust in the context of mobile banking. Initial trust is formed when the customers find performance gains from using mobile banking services (Oliveira et al., 2014). Similarly, in the context of the present study, the customers’ perception that their banking tasks are optimized by using the payments banks will build trust in their minds for these services, which will lead to a strong intention to adopt these services.

Results of this study also offer solid proofs, which confirms the causal path between FC and BI having weight of 0.280. This establishes that people pay specific attention to the presence of resources, skills, facilities and assistance that are essential to use payments banks services effectively.
For the unbanked and underbanked customers (such as small businessmen and migrant laborers), who are relatively poor and have very little knowledge about using mobile phones for making financial transactions, such facilities are essential aspects to ease access to the payments banks services. The results obtained for FC in this study are in sync with the results observed in the prior studies which have studied the impact of FC on the actual use of mobile banking/mobile (Alalwan et al., 2016; Yu, 2012; Zhou et al., 2010). Our results are also similar to Schierz et al.’s (2010) and Mitgen et al.’s (2013), who have advocated the criticality of a similar construct, i.e. “compatibility” in technology adoption. Joshua and Koshy (2011) have also illustrated that the mobile payment adoption rate is faster among the customers who have more convenient access to mobiles and other technology as compared to the ones who do not have convenient access to the same. As the underbanked and unbanked customers are relatively poor, they may not possess mobile phones, because of which they may not intend to adopt payments banks services.

EE was also approved to have a significant impact on the BI to adopt payments banks services. This indicates that when people perceive that using payments banks services requires lower effort, they will be more likely to adopt the same. Prior literature has largely argued that “individuals’ intention to adopt a technology is strongly influenced by the extent of how much such system is easy to use and does not require too much efforts” (Davis, 1989; Eriksson et al., 2005). By a similar argument, numerous studies in the area of mobile banking and mobile payment have suggested a strong relationship between the ease of use of system or EE and the BI to adopt the system (Luarn and Lin, 2005; Gu et al., 2009; Koening–Lewis et al., 2010; Riquelme and Rios, 2010). However, the findings of our study are inconsistent with those of Tarhini et al. (2016), who reported that difficulty in using technology is not a concern for the consumers in the context of Lebanon. However, the Indian underbanked and unbanked customers are not quite comfortable using technology and mobile phones for financial and banking services; therefore, EE or lower effort is of paramount importance for them as far as their intentions to adopt the payments banks services are concerned.

The findings also suggest that PE plays a significant role in the BI to adopt payments banks services, which is in harmony with previous research (Zhou et al., 2010; Luo et al., 2010; Morosan & DeFranco, 2016). This suggests that the extent of benefits in performing payment tasks provided by payments banks is important to the adoption of their services. If the users find the payments banks useful, they are expected to have an improved perception of using the services offered by payments banks. Tan and Lau (2016), in their study conducted in Malaysia, have concluded that PE is the strongest predictor of BI, but the present study contradicts this finding as PE has been observed as a relatively weak influencer of BI (weight = 0.181). This may be attributed to the fact that the present study is done in the context of payments banks, which is a new financial service. For adopting a new service such as payments banks, other factors such as PC, FC and EE are more important than PE for the prospective customers. However, the effect of PE on BI is found to be fully moderated by FC and EE. Therefore, apart from being direct determinants of BI, FC and EE are also found to be significant moderators of the link between PE and BI. This indicates that the users who do not have the necessary resources and knowledge to use payments banks services or the users who find these services difficult to use do not perceive a significant effect of PE on BI. On the other hand, the users who are equipped with the requirements of using these services have a different perception. For such users, PE carries a strong influence on BI. If such users will find utility in using payments banks services, they will be more inclined to adopt them. In contrast, the users who are less skilled or do not have the resources to use payments banks services will not be motivated to adopt these services, even if they find these services beneficial for them.

Apart from being a direct determinant of BI, PE is also found to be a significant predictor of PC (weight = 0.233). Hence, PC is found to be a partial mediator of the relationship between
PE and BI. This indicates that if the Indian customers believe that the payments banks services are beneficial for them, they will form a positive image about these services, which will in turn motivate them to adopt these services.

Our results also indicate that SI has the least but a significant positive influence on BI, which is consistent with many of the previous studies (Zhou et al., 2010; Foon and Fah, 2011; Tarhini et al., 2016). Though SI has been found to have the least impact on BI, it strongly influences PC (weight = 0.518), which in turn strongly influences BI (weight = 0.300). Therefore, it can be concluded that PC partially mediates the positive relationship between SI and BI. This suggests that Indian underbanked and unbanked customers value the endorsements and outlooks of their references groups in building trust in payments banks services and hence in forming their intentions to adopt the same. The opinions and recommendations of influential and significant people may positively impact the adoption of such technologies by forming a positive image about these services. However, there many other studies in the related area undertaken in non-Asian contexts that have rejected the impact of SI (Gerrard and Cunningham, 2003; Riffai et al., 2012). This may be because people in Asian countries, such as India, value the opinions of people in their social circles while taking their personal decisions.

6. Theoretical contribution

Having analyzed the most essential factors predicting Indian underbanked and unbanked customers’ intentions to adopt payments banks services, this study, according to us, is able to substantially contribute to the existing knowledge on mobile payment channels and acceptance of technology in general. Moreover, this study provides a useful direction by analyzing payments banks services, which, to date, have not been well examined as they are novel in the Indian context. This study is an initial attempt toward an integrative and rounded approach for explaining adoption of payments banks in India.

Although prior studies have addressed mobile banking and mobile payment adoption, the uniqueness of this study is in joining the UTAUT constructs with perceived credibility. High explanatory power of our research model is an evidence of this. The model explains 67.5 per cent of the BI to adopt payments banks services in comparison to 31 per cent in the study by Kim et al. (2009), 60 per cent indicated by Luo et al. (2010) and 65.1 per cent indicated by Koening-Lewis et al. (2010). Hence, the proposed research model is a valuable contribution to the literature, as compared to many previous studies.

Moreover, apart from exploring the direct effects of the model constructs on BI, the study has also explored the mediating and moderating effects of certain constructs. PC is found to be a partial mediator of the relationship between PE and BI, and FC and EE are found to be significant moderators of the relationship between PE and BI. So far, the moderating effects of FC and EE on the link between PE and BI have not been investigated in the previous studies related to mobile banking or mobile payments. Therefore, this study makes a noteworthy contribution to the literature.

7. Implications for practice

From practice point of view, the results of the study support the critical role of the following factors: PC, FC, EE, PE and SI. Therefore, aspects relating to these factors should be the focus of consideration of any service provider in their endeavors to motivate their customers to use payments banks.

The results of this study have provided clues for Indian payments banks service providers about the significant impact of PC. People in India are used to seeing brick-and-mortar banks as providers of banking and financial services. In such a situation, they may doubt the ability of payments banks service providers, which include telecom companies and
supermarket chains. Therefore, the service providers have to build their innovative reputation in the minds of prospective customers and win their confidence. Moreover, as the “payments banks” is a relatively new concept in India, people are reluctant to trust it. Hence, the service providers have to initially be sure that payments banks are able to conduct financial transactions and banking services in an efficient, secure and timely manner and there is availability of sufficient information, which is essential for customers to effectively use the services. Service providers should improve customer confidence and faith by providing services that are secure and reliable. They should also emphasize on the positive safety measures of the payments banks during advertisements rather than just creating brand awareness. In brief, the service providers should create trust not only about their image and reputation but also about the concept of “payments banks” itself.

This study also indicated that Indian underbanked and unbanked customers’ intentions seem to be derived from the role of FC. Service providers could therefore provide facilities to these customers through marketing campaigns, support sites and 24 × 7 call centers. These facilities will help prospective customers increase their skills in using mobile phones for payments and other financial transactions. The service providers should provide the facilities of using payments banks services through basic mobile phones, which can be afforded by any person. They should also educate prospective customers on using mobile phones for financial transactions and digital payments. Customers would be more interested in adopting the payments banks services if the above points are taken into consideration.

Considering the role of EE in shaping the customers’ intentions to adopt payments banks services, service providers should design interfaces for using payments banks, which are easy to use and require less mental effort and are thus friendlier. This will encourage customers with less technical skills to adopt the system.

Following the findings that PE has a substantial influence on BI, service providers should emphasize the usefulness of payments banks and their value-added benefits, such as quick and easy access, improved performance, productivity gains and anywhere-anytime availability of all types of banking and financial services, while promoting the payments banks. Doing so may capture users’ attention, thereby reinforcing the adoption of payments banks. Essentially, expanding the range of banking and financial services of the payments banks and maintaining the stability of their performance will positively reflect on the customers’ intentions to adopt payments banks services.

The findings of the study can also be beneficial for MFS providers in other Asian countries to frame their strategies for attracting more customers toward emerging mobile modes of banking and financial services, such as m-payments and mobile wallets. Specifically, the crucial role of perceived credibility as found in the present study suggest that to successfully diffuse any new/emerging MFS among customers, companies should develop trust-building mechanisms such as good customer service, strategic advertising for increasing familiarity and service guarantee statements.

8. Limitations and future scope of work

As is the case with other studies using statistical methods, this study also is not without limitations. The first limitation is concerned with the generalizability of the results as this study was based on the convenience sample of respondents of only one city of India. This could negatively reflect the ability to generalize the results across parts of the country. Moreover, the study only focused on the perceptions of small businessmen and migrant laborers. This might raise concerns about the applicability of the results on other sections of the population, which might have different demographic characteristics (e.g. occupation, education, income and exposure to technology). The second limitation is owing to the inherent nature of payments banks services, which are comparatively new in India. Most
mobile-phone users might be acquainted with this service as an idea but may lack experience or knowledge concerning its functionalities and capabilities. Therefore, this fact should be kept in mind before interpreting the findings. Future research could compare mobile banking and payments banks with each other. As we assume that there might be a broader adoption of payments banks by the general people of India over time, a longitudinal study may be conducted in future to measure this development. Adjusting the conceptual model of this by including “experience” and “age” as moderators may also be worth considering in future. Even though this study extends the UTAUT model by including PC, the results of the explanatory power of the model indicate that there is still scope for improvement. Therefore, including other constructs, such as hedonic motivation, perceived risks and trialability, could be a fruitful path forward. Finally, the study has examined the impact of various constructs on BI to adopt payments banks services; the actual use behavior has not been examined as payments banks services is a relatively new phenomenon in India. Future studies may examine the factors influencing the actual use of payments banks.

9. Conclusion

Payments banks represent a new and interesting area to be studied, especially taking into consideration the core challenges in introducing this type of technology-based service for the financial inclusion of underbanked and unbanked customers. Considering the nascent stage of payments banks in India, this study appreciated the requirement of analyzing the leading factors that would impact the Indian customers’ intentions to adopt payments banks services. Moreover, there are limited studies that have addressed the issues related to mobile banking and mobile payments in India. The present study articulated and tested an integrated model to explain the decision of adopting payments banks services. The findings of this study indicate that the proposed model has significant explanatory power. The integration of PC with UTAUT is theoretically interesting, and empirically significant too, as it clarifies why there is higher variation in intention to adopt than suggested by prior studies on adoption intentions. This research work reveals that the most significant factors that explain intent to adopt payments banks services are PC and FC, followed by EE, SI and PE. PC has emerged as the most important influencer of adoption intention, which also mediates the relationships of SI and PE with adoption intention. The integrated model presents a new approach for future studies to be carried in the area of technology adoption. For practitioners, the study provides valuable insights for implementing payments banks services in India, as well as similar MFS in other Asian countries.

References


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Ivatury, G. and Mas, I. (2008), The Early Experience with Branchless Banking, CGAP, Washington, DC.


Further reading


### Table Al: Survey questionnaire

<table>
<thead>
<tr>
<th>Factor</th>
<th>Items</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived credibility</td>
<td>PC1: payments banks (PB) services seem dependable*</td>
<td>Yu (2012), Amin (2008), Daniel and Jonathan (2013), Oliveira et al. (2014)</td>
</tr>
<tr>
<td></td>
<td>PC2: PB services seem secure</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PC3: I trust the PB service providers</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PC4: I will not incur the risk of financial losses by using PB services</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PC5: I will not incur the risk of personal information theft by using PB services</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PC6: PB services seem reliable</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PC7: The PB service providers are known for their credibility</td>
<td></td>
</tr>
<tr>
<td>Performance expectancy</td>
<td>PE1: I find PB services useful in my daily life</td>
<td>Venkatesh et al. (2012), Belanger and Carter (2008)</td>
</tr>
<tr>
<td></td>
<td>PE2: Using PB bank services will increase my chances of achieving</td>
<td></td>
</tr>
<tr>
<td></td>
<td>tasks that are important to me</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PE3: Using PB services will help me accomplish things more quickly</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PE4: Using PB services will improve my efficiency while performing</td>
<td></td>
</tr>
<tr>
<td></td>
<td>banking tasks</td>
<td></td>
</tr>
<tr>
<td>Effort expectancy</td>
<td>EE1: Interaction with PB does not require a lot of mental effort</td>
<td></td>
</tr>
<tr>
<td></td>
<td>EE2: Becoming skillful at using PB services is easy for me</td>
<td></td>
</tr>
<tr>
<td></td>
<td>EE3: Learning to use PB services is easy for me</td>
<td></td>
</tr>
<tr>
<td></td>
<td>EE4: I think PB services are easy to use</td>
<td></td>
</tr>
<tr>
<td>Facilitating conditions</td>
<td>FC1: I have the resources necessary to use PB services</td>
<td></td>
</tr>
<tr>
<td></td>
<td>FC2: I have the knowledge necessary to use PB services</td>
<td></td>
</tr>
<tr>
<td></td>
<td>FC3: I can get help from others when I have difficulties using PB services</td>
<td></td>
</tr>
<tr>
<td>Social influence</td>
<td>SI1: People who influence my behavior think that I should use PB</td>
<td></td>
</tr>
<tr>
<td></td>
<td>services</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SI2: People who are important to me think I should use PB services</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SI3: People who use PB services tend to have a higher status</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SI4: People whose opinions that I value prefer that I use PB services*</td>
<td></td>
</tr>
<tr>
<td>Behavioral intention</td>
<td>BI1: I prefer PB to other service channels (e.g. branch, internet,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>mobile banking, mobile wallets)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>BI2: I intend to use PB services in the future</td>
<td></td>
</tr>
<tr>
<td></td>
<td>BI3: I believe it is worthwhile for me to use PB services</td>
<td></td>
</tr>
</tbody>
</table>

Note: *Items were dropped during measurement model fitting

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**Corresponding author**

Rishi Manrai can be contacted at: rishiman7@gmail.com

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