



International Journal of Electronic Finance

ISSN online: 1746-0077 - ISSN print: 1746-0069

<https://www.inderscience.com/ijef>

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DOI: [10.1504/IJEF.2023.10049280](https://doi.org/10.1504/IJEF.2023.10049280)

Article History:

Received: 13 December 2021

Accepted: 12 June 2022

Published online: 21 December 2022

Role of mobile banking in financial inclusion: evidence from agri traders of India

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Abstract: Financial inclusion is the driving force for growth in emerging markets of the world. It boosts the process of development and poverty alleviation for any economy. Most of the banks utilise an expensive brick and mortar model; therefore, mobile banking can act as a facilitator for financial inclusion in economic manner. This study identifies the factors effecting adoption of mobile banking among agri traders in wholesale commodity markets of India. It also explores the challenges faced by them, in mobile banking adoption. Structured questionnaires were used for primary data collection and the sample of 230 agri traders was analysed. Confirmatory factor analysis was done using SPSS 26 and for structural equation modelling Smart PLS3 was used. Empirical results of research show that perceived usefulness, ease of use and trust have significant and positive impact on behavioural intention towards mobile banking adoption among agri trader community of India. Social influence had no significant impact on behavioural intentions of the agri trader. Adoption of mobile banking by agri traders will pave the way forward for digital transformation of economy, leading to cashless economy and financial inclusion at grass root levels of society.

Keywords: agri traders; behavioural intention; cashless economy; digitalisation; financial inclusion; financial literacy; India; mobile banking.

Reference to this paper should be made as follows: Tikku, S.R. and Singh, A.K. (2023) 'Role of mobile banking in financial inclusion: evidence from agri traders of India', *Int. J. Electronic Finance*, Vol. 12, No. 1, pp.36–54.

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1 Introduction

Financial inclusion is the yardstick for measuring the growth a nation. It propels economic expansion and poverty alleviation. Financial inclusion is interpreted as an access to un-interrupted financial services and credit facilities to un-served and underprivileged sections of economy (Rangarajan Committee, 2008). Financial inclusion acts as a facilitator to unbanked sections of society, helping them meet their financial needs and pursue growth opportunities. All individuals require banking facilities in the absence of which they are forced to use informal finance, which bears high cost (Reserve Bank of India, 2020). India is an agricultural country with 42.4% of its total workforce engaged in agriculture (United Nations Development Programme, 2020). Agriculture and allied activities contribute 16.5% of country's gross added value for FY 2019–2020 (Annual Report, Department of Agriculture Cooperation and Farmers Welfare, <http://www.Agricoop.nic.in>). In India, wholesale commodity market is a regulated platform that connects farmers to consumers. These types of markets connect farmers to end users through agri traders, who facilitate the process of sale in transparent manner and charge certain percentage of sale as commission from the buyers. Most of the districts have wholesale commodity markets for sale of farmer's produce. These markets are operational from midnight to wee hours of morning, where big and marginal farmers sell their produce through the agri trader. Agri traders act as agents as well as creditors to these farmers, hence generations of farmers are associated with same trader. Due to lack of banks in vicinity and odd operational hours, all the transactions done between farmers and agri traders are in cash. The movement towards cashless economy can be achieved by encouraging agri traders to use digital banking and provide financial literacy to rural and underdeveloped sections of economy. Digitalisation of rural community can transform Indian economy to a cashless society at grass root level. Cashless economy is a pre-requisite in today's fast changing economic scenario. With pressure from government and introduction of various regulatory guidelines, rural population is slowly inching towards formal banking (Kandpal and Mehrotra, 2019). The major hindrances preventing digitalisation from making inroads in rural and underserved sections of society are enlisted below (Trendnov et al., 2019):

- inadequate infrastructure
- reluctance to usage of mobile phones for financial transactions
- poor internet connectivity
- socio cultural barriers
- convenience

- low bank account penetration
- low financial literacy.

All the above factors contributed to lesser usage of digital platforms for banking transaction by this segment of society. Digital payments in agriculture sector removes barriers of cash transactions, thus bringing farmers close to their buyers and suppliers, which in turns boosts financial health of agricultural community (Asia Pacific Economic Cooperation, 2017). Each state in India has various wholesale agricultural commodity markets, where farmers sell their produce to traders. These wholesale markets form backbone of rural economy (Kapur and Krishnamurthy, 2014).

Majority of rural population in India is engaged in sale of agricultural commodities to urban and semi urban areas. In these whole sale markets, farmers meet the buyers of their products through trading agents, who facilitate the process of sale in a transparent manner and charges commission from the buyers. Globally, 235 million unbanked adults receive agricultural payments in cash (Demirguc-Kunt et al., 2018). The digital transformations of rural India can happen only when the agri traders and farmers have confidence in doing banking transactions digitally. The phenomenal effect of such transformation can change our cash-oriented economy to a cashless, thereby reducing the individual cash holdings.

In emerging economies like India, mobile phones have revolutionised the financial sector. They not only act as virtual banks and automated teller machines, but also as point of sales terminals (Ondiege, 2010). They also serve as future for digitalisation in India (Krishna and Sequeira, 2016). Mobile banking provides better opportunities for partnerships between banks and micro finance institutions (MFIs), thereby leading to an increase in banks outreach to rural sectors (Ondiege, 2010). Mobile phones are picking up as means of communication in urban as well as rural areas of India. At present the country has an overall tele-density of 84.69%, out of which rural tele-density is at 58.99%. The wireless subscribers in rural areas have increased from 520.08 million at the end of April 2020 to 523.70 million by the end of May 2020, as per Telephone Regulatory Authority of India (TRAI, 2020). In India, 69% adults have mobile phones (Demirguc-Kunt et al., 2018). These users can be motivated to use mobile banking, for financial transactions (Demirguc-Kunt et al., 2018). Modern day banks have started transient from traditional to digital banking concept leading to plethora of products being offered under the umbrella of innovative banking (Kyari, 2020). Adoption of these tech savvy, ease to use product such as mobile banking application can lead to deeper penetration of banking services, at convenient and an affordable cost, across the country. Even though financial inclusion is top priority of all government institutions, banks refrain from serving the underprivileged segment of society, due to unprofitable business propositions. In order to bring all under purview of banking, technology plays a major role, as it is low cost and does not require brick and mortar model of bank branches, thus saving cost for banks as wells as customers (Mohapatra et al., 2020). Even though, India is focused on digitalisation, but the ramifications are far from expectations.

1.1 Global scenario of mobile banking

Being world's third largest economy, Japan is one of the most technological advanced countries in the world. Japan has highest life expectancy in the world. With an aging population, banks utilise technology at their behest to improve their services. These

services include mobile interactions, which help in providing tailor-made solutions to their clients. Strengthening cyber security has become a challenge for most banks as they rapidly move towards an era of digitalisation (Keigo and Tisseverasinghe, 2014). Another global giant, China, has undergone tremendous expansion in smart phone usage in the recent times. The Chinese banks are focusing on key behavioural norms such as attitude, perceived risks and benefits, which have a consequential effect on mobile banking usage (Siyal et al., 2019). In contrast to the technological advancements and economic prosperity these countries possess, in the African subcontinent (technological backward sub-continent) the educated youth are targeted, for better adaptability of the mobile banking (Babatope and Mushunje, 2020). Mobile banking acts as an expedite for economic development. In context of Bangladesh, the studies revealed that use of English language in mobile banking applications acts as a linguistic barrier. Hence more training is needed to overcome such a lingual hindrance (Lee et al., 2021).

Studies relating to Malaysia, reveals that behavioural intentions to adopt mobile banking are influenced by usefulness perceived by the customer (Rehman and Shaikh, 2020). Mwendwa et al. (2016) in their study discussed the pros and cons of mobile banking. As per the authors mobile banking can be used by the customers irrespective of their location or time. In Kenya, connectivity issues are greatest barriers to mobile banking adoption. Greater synchronisation among banks and internet service provider can long term effects on their financial digitisation.

All the previous studies on this subject had focused only on customer satisfaction and challenges faced in usage of mobile banking. This study explores adaptability of mobile banking, as a stepping stone for financial inclusion and greater economic growth. This study focuses exclusively on behavioural intention towards mobile banking adoption by underserved sections of society, which is a key driver in acceptability of mobile banking amongst rural Indians. Erstwhile, studies showed that mobile banking in India faced lot of challenges, in terms of illiteracy; language barriers; as most of the mobile applications were not in regional language. Acceptance and loyalty towards new technology such as mobile banking depended on how banks motivate their customers to shift towards digital technology. Objectives of this research work were derived as below:

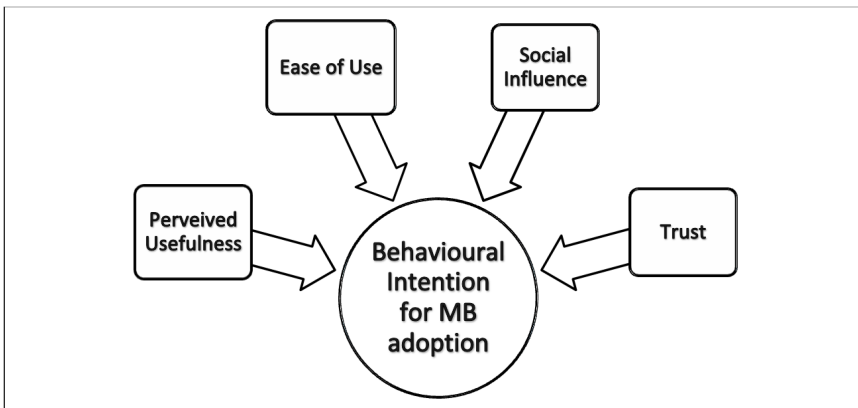
- 1 to identify the factors influencing behavioural intention of mobile banking adoption among agri traders in wholesale commodity markets
- 2 to assess the relationship between behavioural intentions towards adaptability of mobile banking with exogenous factors such as perceived usefulness, ease of use, social influence and trust
- 3 to study challenges in adoption of mobile banking services by traders in wholesale commodity market, which influence penetration of financial inclusion in rural India.

2 Theoretical background and hypothesis development

In India financial inclusion has shown a remarkable shift from credit focused approach to the holistic view of financial services. Traditionally, the banks had not considered economically weaker sections as viable markets. Commercial banks viewed financial inclusion as social service and non-profitable proposition (Singh et al., 2014). The digitalisation of rural India includes availability of technology, affordability and

supportive government policies. Bansal (2014) in his research work depicted the role of information technology in extending financial services and importance of financial literacy in rural areas. Aswin and Rao (2018) highlighted the role of information technology in banks such as access to liquidity, asset transformation and monitoring risk. As per the research paper, a sizeable population was not using e-banking services because of perceived risk; hence banks should develop systems and procedures which are robust and provide sense of security to the end users. Mobile banking usage is low-cost affair for the customers and is affordable for the greater population (Dubey, 2019). McIntosh and Mansini (2018) in their article stated that usage of fintech helped farmers in identifying business opportunities and gave them ability to perform banking transactions. Behl et al. (2016) in their research paper emphasised the role of mobile banking as an efficacious method for financial inclusion. Goyal et al. (2012) in their study stated that mobile commerce is a natural successor to electronic commerce. Their research work emphasised the realisation of mobile payments as new and unforeseen way of convenience and commerce. Figure 1 represents exogenous variables affecting Behavioural Intention for mobile banking adoption among wholesale commodity traders.

Figure 1 Factors of conceptual framework adapted from TAM model



Jamil et al. (2018) in their study analysed the correlation between elements of digital banking, service quality and customer satisfaction. The research work showed that e-banking services were relatively new in Lebanon. As per the study, reliability of service quality forecasted the customer satisfaction in Lebanese economy. Reserve Bank of India (2008) laid down operating guidelines for mobile banking transactions in India. Jerene and Sharma (2019) in their research work elaborated that perceived usefulness, perceived financial trust, subjective norms and perceived ease of use will determine customer's will to adopt the digital channel for financial services. Akhter et al. (2020) in their research emphasised the role of perceived usefulness in mobile banking adoption. The authors state that, to increase penetration, mobile banking should be user friendly, simple and easy to understand. Sohail and Al-Jabri (2014) studied the role of human attitude in mobile adaptability amongst users and non-users. Siyal et al. (2019) analysed the reason for low adaptability of mobile banking in China. As per the authors, acceptance and loyalty to mobile banking depended on bank's encouragement of its clients to adopt technology. Addisu et al. (2019) in their research showed that regulatory and market conditions are more important determinants for usage of mobile money than the factors

related to financial services. Leo and Dubus (2019) in their study emphasised the importance of literacy in improvement of financial inclusion among rural population. Shaikh et al. (2015) based on their research work emphasised that satisfaction of customer in using mobile banking is measured by user friendliness, convenience and speed. More the satisfaction of customer with technology higher is its referral to peer group by the customer. Mohapatra et al. (2020) studied mobile banking adoption among underprivileged users in India. As per the study, the financial institutions should focus on customer friendly mobile banking services, which can lead to greater intent of adoption among its users. The marketing campaigns, mass awareness and word of mouth have greater impact on digital adaptability. Sitorus et al. (2019) analysed the role of satisfaction in mobile banking usage in Indonesia. The study states that satisfaction can be measured in terms of experience of the customer at a branch as well as digital platforms. Banks can enhance this experience by making digital platform more users friendly. Perceived usefulness and relative advantage are most important factors' affecting behavioural intention towards adoption of this new technology (Siyal et al., 2019; Sang et al., 2009). Masoud et al. (2021) showed that variables affecting mobile banking operations are perceived usefulness and prior experience. As per work of Abdelbaset et al. (2022) showed that to foster mobile banking services, banks should focus more on perceived usefulness, perceived ease of use, reference groups and credibility, as these have strong impact on intention to use mobile banking. Hence based on previous studies below mentioned hypothesis was arrived:

H1 Perceived usefulness will have a positive effect on behavioural intention to use mobile banking among agri traders of wholesale commodity market.

Mobile banking adoption is advantageous to both banks as well as its customers. Mobile banking is available anywhere and anytime. It is an efficient technology and offers convenience to its customers and increases their access to finance, especially in rural areas (Ondiege, 2010). Pratama and Renny (2022) illustrated in their research work, the significant impact of effort expectancy and performance expectancy on behavioural intention for digital banking. Perception of relative advantage, compatibility, risk towards internet banking usage, influences behavioural intentions of the customer to adopt electronic banking (Tan and Teo, 2000). Study done by Banerjee and Singh (2022) showed that perceived ease of use, perceived usefulness, compatibility and observability affected behavioural intention and attitude, positively. Vuong et al. (2020) emphasised that banks should make mobile banking application more user friendly, by having 'auto-translate' option for various languages. This will enhance perceived ease of use. The banks should conduct various workshops in their premises, to educate customers on the usage and benefits of mobile banking. Senthilkumar and Palaniswamy (2019) in their study elaborated that ease of use for mobile payments, effects customer preference towards this digital channel. Mobile money adoption in Ghana is greatly influenced by perceived ease of use, security and perceived usefulness (Mensah and Kang, 2016). On the basis of the previous researches done, we formulated the hypothesis:

H2 Ease of use will have positive effect on behavioural intention to use mobile banking among agri traders of wholesale commodity market.

As per the study done by Mohapatra et al. (2020) social influence had a crucial effect on behavioural intention of customer towards technology adoption. Greater stress should be

laid by government and financial institutions, on this aspect by organising mass campaigns about financial inclusion. This will increase the outreach of banks among underserved and unbanked sections of society. Sapriki et al. (2022) advocated the performance expectancy and social influence had positive effect on mobile banking user's behavioural intention. As per the study, the non-users also identified the future gains by usage of mobile banking. Yun et al. (2017) in their study, emphasised that instinctive norms such as peer group, colleagues and family are important enablers for mobile banking adoption. Shahid et al. (2022) in their study of impact of customer experience on mobile app established that social influence, convenience and trust played a major role in improving customer experience. Kishore and Sequeria (2016) in their study examined adoption of digital banking in rural Karnataka. The authors assessed association between performance expectancy (PE), effort expectancy (EE), social influence (SI), attitude and perceived risk (PR) with behavioural intention (BI). As per their analysis, mobile phones were identified as the future of financial inclusion. Saxena et al. (2022) studied the impact of facilitating conditions namely performance expectancy, effort expectancy, optimism, innovativeness and social influence. These factors had greater hold on customer's intention to adopt mobile banking. Chopdar et al. (2022) in their study identified the importance of social influence on mobile banking usage frequency by customers, who were addicted to smart phones. All these studies led to the understated hypothesis:

H3 Social Influence will have positive effect on behavioural intention to use mobile banking among agri traders of wholesale commodity market.

In today's electronic age, safety, trustworthiness, speed and cost effectiveness are major factors affecting adoption of this technology (Babatope and Mushunje, 2020). Svitlana et al. (2019) in their research identified lack of trust, high tariffs and low public awareness as main barriers to financial inclusion. As per author, efforts should be made to reduce tariff and enhance accessibility to boost financial inclusion. Balogun and Olaleye (2022) indicated that higher trust among customers can be achieved only through orientation and persuasion and this acts as stimulus towards mobile banking adoption. Chayomchari (2020) emphasised the positive role of trust on performance expectancy, effort expectancy and behavioural intention for generation Z in Thailand. Vuong et al. (2020) in their study showed that credibility is another key factor, which banks should uphold. Banks should develop trust and confidence in the minds of the customer. This can be ensured by providing assurance to customers against any mobile banking fraud. Usage of social media, newsprint, internet can be helpful for building awareness among masses. Chakiso (2019) in his research work identified role of out of the box thinking on aspects such as lifestyle, which gel with different types of customers. As per the author the factors such as relative advantage, trust and compatibility, influenced both users and non-users of mobile banking. Virus and malware attacks also posed a threat to its adaptability. These factors indicated that trust influenced the behavioural intentions of consumers towards mobile banking adoption (Goyal et al., 2012; Lin, 2011; Koltzsch, 2006). Tiwari et al. (2014) probed the reasons for lack of awareness and distrust in mobile banking service by the customers. The authors also studied about privacy related issues, which caused distrust among users of mobile banking services. Trust is key determiner for MB adoption and its perceived ease of use also affects trust indirectly (Tiwari, 2021). As per the study done by Sankaran and Chakraborty (2022), trust, effort expectancy, monetary value, emotional value and quality value had notable impact on

behavioural intent. Abubker et al. (2021) affirmed the role of government monitoring is great influencer of behavioural intention of mobile payment systems. Government monitoring creates an environment of trust and security in the minds of customers, thus making them feel secure to use mobile banking channel. Previous studies helped in considering trust factor in hypothesis formulation:

H4 Trust will have positive effect on behavioural intention to use mobile banking among agri traders of wholesale commodity market.

3 Research methodology

3.1 Sampling and data collection

The approach for this research was quantitative in nature. In the study, the sample was selected on the basis of random sampling technique. Wholesale commodity markets in Delhi-National Capital Region (NCR) were identified for sample collection. On the basis of random sampling two markets were identified, one in Noida (NCR) and another in Ghazipur (Delhi). The study had 230 shops selected using random sampling technique. Face to face interviews were conducted to avoid any ambiguity, as traders were tied up in hectic day to day business operations. The data collection was done using structured questionnaires, which was kept crisp, as the traders, often had paucity of time. The questionnaire had 30 items covering all the variables and were based on Likert scale of 1 to 7, where 1 implied strongly disagree, 2 disagree, 3 somewhat disagree, 4 neither agree nor disagree, 5 somewhat agree, 6 agree and 7 strongly agree. The constituents of the construct were drawn from previous literatures.

Table 1 Demographics details demographics frequency

	Nos.	%
Gender		
Male	230	100.00
Female	0	0.00
Age (in years)		
18 < 25	25	10.86
25 < 35	31	13.47
35 < 45	41	17.82
45 < 55	77	33.47
>55	56	24.34
Education		
Illiterate	13	5.65
Undergraduate	150	65.21
Graduate	66	28.69
Post graduate	1	0.43

Source: Primary data collected by author

Table 1 Demographics details demographics frequency (continued)

	<i>Nos.</i>	<i>%</i>
Area		
Rural	191	83.04
Urban	39	16.95
Mobile banking usage (in numbers)		
Mobile banking non-users	151	65.65
Mobile banking users	79	34.35

Source: Primary data collected by author

The survey conducted had a total of 230 respondents. As per Table 1, the sample consisted of 100% male respondents, as agricultural commodity markets in India are dominated by males. The respondents were from different age groups; 10.86% in the age group of 18 < 25 years; 13.47% in the age group of 25 < 35 years; 17.82% in the age group of 35 < 45 years; 33.47% in age group 45 < 55 years and 24.34% in the age group of >55 years respectively. The education level of agri traders showed that 5.65% were illiterates; 65.21% were undergraduates; 28.69% graduates and 0.43% postgraduates respectively. Amongst the traders 83.04% were from rural background and the rest 16.95% were from urban centres. The sample was mixed lot having 65.65% of non-users and 34.35% of users of mobile banking.

3.2 *Variable description and measurement*

The study involved four independent variables namely perceived usefulness, ease of use, social influence and trust. To measure dependent variable behavioural intention was used. The constructs used for measuring various independent variables are mentioned in Table 2. The variables, perceived usefulness and ease of use were taken from technology acceptance model (TAM) (Davis, 1989). Independent variables social influence and trust were used to understand the behavioural aspect of mobile banking adoption (Gefen et al., 2003; Venkatesh et al., 2003).

Table 2 Construct description variables construct items

<i>Variables</i>	<i>Construct item description</i>	<i>Construct item no.</i>	<i>Reference</i>
Independent variable			
Perceived usefulness	Mobile banking is very useful	PE1	Davis (1989)
	Using mobile banking improves my productivity	PE2	
	Mobile banking helps me in keeping proper record of all my financial transactions	PE3	
Ease of use	Mobile banking has lot of flexibility	EE1	Davis (1989)
	Mobile banking is very easy to use	EE2	
	Use of mobile banking enhances my skills	EE3	

Table 2 Construct description variables construct items (continued)

<i>Variables</i>	<i>Construct item description</i>	<i>Construct item no.</i>	<i>Reference</i>
Independent variable			
Social influence	People who are important to me want me to use mobile banking	SI1	Venkatesh et al. (2003)
	My family and friends support me to use mobile banking	SI2	
	My working environment supports mobile banking usage	SI3	
	People who influence my decision want me to adapt to this banking channel	SI4	
	I can complete transaction using mobile banking without any external help	SI5	
Trust	Mobile banking service provider give reliable information	T1	Gefen et al. (2003)
	Mobile banking service provider ensures that my information is not shared without my consent	T2	
	Mobile banking service provider has adequate expertise in this field	T3	
Dependent variable			
Behavioural intention	I will continue to use mobile banking	BI1	Davis (1989)
	I would recommend mobile banking to my friends	BI2	
	I plan to use mobile banking more frequently	BI3	

4 Results and discussion

4.1 Measurement model

In Table 2 initially perceived usefulness has three construct items, ease of use three construct items, social influence five construct items, trust three construct items and behavioural intention has three construct items.

As per Table 3, data multicollinearity check was done using variation inflation factor (VIF). The results showed that the VIF value ranges between 2.730 to 4.931, which were in the range much below the threshold values. This suggested that the data did not have multicollinearity. Construct items, which has VIF values of more than 5 show higher collinearity among variables, were removed from the study. The acceptable range of VIF score is less than 5 (Ringle et al., 2015; Jong, 2019).

To check the validity of constructs, confirmatory factor analysis was conducted. The convergent validity was analysed using average variance extracted (AVE) and composite reliability (CR). To measure AVE and CR, factor loadings were considered and they

indicated the magnitude of the factors converging on a construct. Table 4 shows the average variance extracted, which measured the amount of variance captured by each construct, were calculated perceived usefulness (PE) 0.841, ease of use (EE) 0.884, social influence (SI) 0.841, behavioural intention (BI) 0.853 and trust (T) 0.838 respectively. These values were above the cut off value of 0.50 (Byrne, 2016). The composite reliability was also calculated to measure the internal consistency of the scale items. The composite reliability score for the analysis were PE – 0.914, EE – 0.939, SI – 0.941, T – 0.940 and BI – 0.921 respectively, which were above the threshold value of 0.70 (Hair et al., 2010). The reliability of scale of constructs were checked using Cronbach's alpha and were in the range of 0.811 to 0.906, which were higher than the threshold value of 0.70 (Cronbach, 1951). Hence it implied that the scale of questionnaire was reliable.

Table 3 VIF scores

<i>Independent variables</i>	<i>VIF scores</i>
PE2	2.730
PE3	4.167
EE1	3.847
EE3	4.834
SI1	4.288
SI2	4.001
SI3	3.530
T1	3.993
T2	4.931
T3	3.681

Source: Author's calculation

Table 4 Results of confirmatory factor analysis

<i>Factor items</i>		<i>Cronbach's alpha</i>	<i>AVE</i>	<i>CR</i>
Behavioural intention	BI	0.829	0.853	0.921
Ease of use	EE	0.869	0.884	0.939
Perceived usefulness	PE	0.811	0.841	0.914
Social influence	SI	0.906	0.841	0.941
Trust	T	0.904	0.838	0.940

Source: Author's calculations

Table 5 Discriminant validity (Fornell-Larcker criterion)

	<i>BI</i>	<i>EE</i>	<i>PE</i>	<i>SI</i>	<i>T</i>
BI	0.924				
EE	0.852	0.940			
PE	0.843	0.863	0.917		
SI	0.840	0.888	0.878	0.917	
T	0.872	0.915	0.881	0.908	0.916

Source: Author's calculations

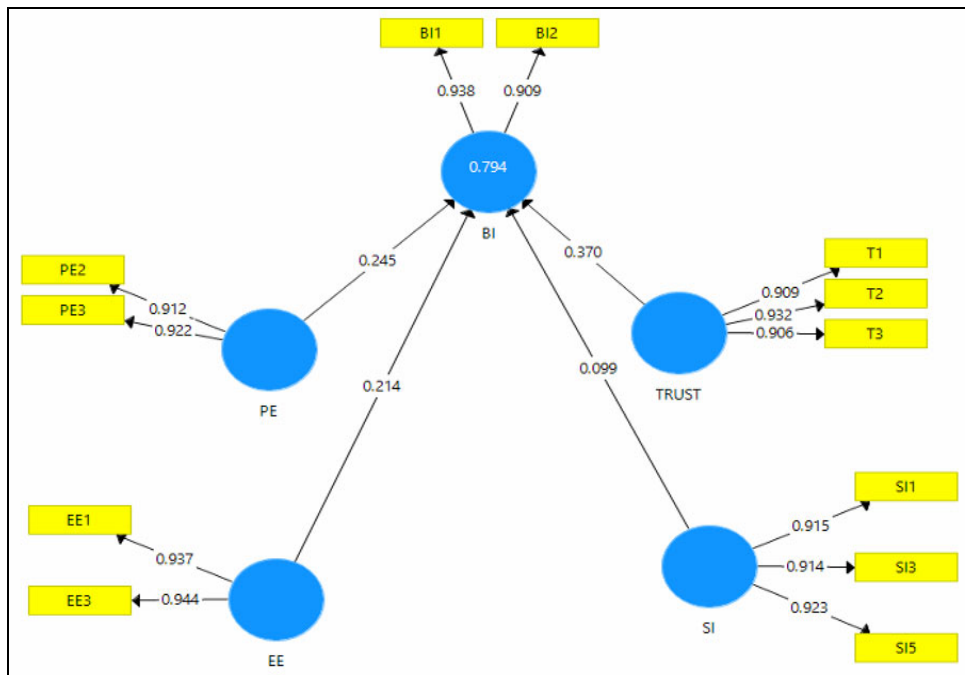
The discriminant validity was checked to see if the constructs in the study were well defined from each other. For this the data was checked to identify if the square root of every factor average variance extraction (AVE) was more than the correlation among the factors and all the factors in the model (Fornell and Larcker, 1981). As per Table 5, the square root of AVE for BI was 0.924, EE – 0.940, PE – 0.917, SI – 0.917 and T – 0.916 respectively. These figures were greater than the correlation between the factors (Fornell and Larcker, 1981), hence discriminant validity was established for the given sample.

4.2 Structural equation model and hypothesis testing

The structural model for the study is depicted in Figure 2. The given model had R² of 0.794 and adjusted R² of 0.791. This implies that 79.4% of variation in behavioural intention was explained by independent variables.

The fitness of structural model in this data analysis was detailed in Table 6. The indices of the structural model showed that SRMR, which measures the average magnitude of discrepancies between observed and expected correlation. The value of SRMR, less than 0.08 is considered a good fit (Hu and Bentler, 1999). In our study SRMR value was 0.05, which implies that the model is good fit. Another measure of model fit is NFI, which is an incremental fit measure. Its value close to 0.90 is considered as good fit (Lohmoller, 1989). In our data, NFI value is 0.85, hence this is within the permissible limits. Based on results of SRMR and NFI, our model is a good fit.

Figure 2 Structural model for behavioural intention (see online version for colours)



Note: BI – behavioural intention; PE – perceived usefulness; EE – ease of use; SI – social influence; T – trust.

Source: Author’s calculation

Table 6 Model fit

<i>Estimate</i>	<i>Estimated model</i>
Standardised root mean square error (SRMR)	0.05
Normed fit index (NFI)	0.85
R ²	0.794
Adjusted R ²	0.791

Source: Author's calculations

In this study, there were four exogenous variables namely, perceived usefulness, ease of use, social influence, trust and one endogenous variable behavioural intention. The statistical analysis of data involved structural equation model using PLS3 software. As per Henseler et al. (2009) the significance was determined using path coefficients. The data was analysed using partial least square method. The path coefficients and significance values of each construct are displayed in Table 7.

Table 7 Path coefficients

<i>Path</i>	<i>Hypothesis no.</i>	<i>Path coefficients (b)</i>	<i>Sample mean</i>	<i>Standard deviation</i>	<i>T statistics</i>	<i>p values</i>
PE → BI	H1	0.245	0.247	0.072	3.411**	0.001
EE → BI	H2	0.214	0.214	0.073	2.939**	0.003
SI → BI	H3	0.099	0.097	0.079	1.259	0.208
T → BI	H4	0.370	0.370	0.096	3.853**	0.000

Note: **T value 1.96 (5% significance), p value significant at 5%.

Source: Author's calculations

Table 8 Hypothesis testing results

<i>Path</i>	<i>Hypothesis no.</i>	<i>Hypothesis description</i>	<i>Hypothesis decision</i>
PE → BI	H1	Perceived usefulness will have a positive effect on behavioural intention	Supported
EE → BI	H2	Ease of use will have positive effect on behavioural intention	Supported
SI → BI	H3	Social Influence will have positive effect on behavioural intention	Not supported
T → BI	H4	Trust will have positive effect on behavioural intention	Supported

Source: Author's calculation

The results in Tables 7 and 8 show that the direct effect of PE → BI is significant ($b = 0.245$, $p = 0.001$). Since both the values of path coefficient and p value are significant, hence it supports Hypothesis 1 (H1). The relationship between EE → BI, is significant ($b = 0.214$, $p = 0.003$). Hence, it supports Hypothesis 2 (H2). The results of relationship between SI → BI, is non-significant ($b = 0.099$, $p = 0.208$), therefore Hypothesis 3 (H3) is not supported. The association between T → BI is significant ($b = 0.370$, $p = 0.000$), thus Hypothesis 4 (H4) is supported. The hypothesis testing

results show the perceived usefulness, ease of use and trust have positive and significant impact on behavioural intention for mobile banking adoption among agri traders, hence Hypothesis H1, H2, H4 are supported.

Hypothesis H3 is non-significant and hence not supported.

The results of the study are in line with previous studies, which emphasised that perceived usefulness is an enabler for adoption of mobile banking (Sitorus et al., 2019; Chakiso, 2019; Siyal et al., 2019; Vuong et al., 2020). The agri traders in commodity market have very hectic schedule. The adoption of technology by this community will depend upon how it would serve their purpose. Similarly, ease of use of mobile banking has positive and significant effect on behavioural adoption. Mobile banking is beneficial both to banks as well as the users. It reduces the overhead cost for the bank, as requirement of brick-and-mortar model is done away. Also, the consumers can utilise mobile banking services anytime. The cost of doing transactions using mobile banking is very low and hence, it adds to the saving by the customer as the agri traders have low education level, hence easier the use of technology will lead to greater adoption. This result seems to be congruous with earlier studies done in this matter (Vuong et al., 2020; Kumar et al., 2020; Siyal et al., 2019). The results of our study show that social influence does not have any significant effect on behavioural intention. The effect of peer group and word of mouth are great influencers, as agri traders are close knit community. These results deviate from the earlier studies done in this context (Mohapatra et al., 2020). Trust in usage of M-banking is a key factor for its adoption. Trust in our study, has a significant relation with M-banking adoption and this blends with previous studies done in this matter (Kumar et al., 2020; Wu et al., 2010).

5 Conclusions

The results of analysis indicated that perceived usefulness, ease of use and trust were key factors which influenced behavioural intentions of the agri traders towards mobile banking adoption. The traders belong to a group of society, who have low level of education. Building awareness and spreading positive information about benefits of mobile banking can lead to digitalisation of financial transactions. The use of mobile banking can expand access, reduce cost and provide financial convenience to the traders. These traders lack trust in doing financial transactions through mobile banking. Therefore, the banks should address security and privacy issues and encourage mobile banking usage. A bank account for agri traders can pave way for other financial products like insurance and bank credit. One major road block to M- banking adoption is lack of financial literacy. Banks can conduct regular workshops in wholesale commodity markets to provide financial literacy to agri traders. Financial institutions, government agencies and banks can increase awareness of mobile banking by spreading of word of mouth or use of social media; hence, adaptability of mobile banking by agri traders will bring rural community on digital platform, as they are in direct touch with the farmers. This small step will lead to a cashless economy and financial inclusion of the agricultural sector.

6 Limitations and further scope

This study has some limitations. The study took into consideration only two wholesale trader markets of Delhi-NCR. The research could include more number of wholesale trade markets in other parts of country with same socio economic and demographic conditions. The sample size for the study is moderate and that can be increased to understand the greater implications of the variables on mobile banking adoption intention. Moreover, the future studies can also take into consideration the moderating effect of control variables such as educational qualification and age of the respondents. In India most of rural and semi urban population do not have adequate education level, so they have an impression that usage of digital channels is very difficult. By using education and age of respondents as moderate variables, new insights can be thrown on the study. Financial inclusion involves client onboarding by various banks and other financial institutions. These organisations also face a lot of challenges, as majority of rural population still prefer cash channel for doing transactions. Hence, this study can also be done from banks point of view, considering the challenges faced by them in implementation of digitalisation among rural segments.

7 Implications

In developing economy like India, digitalisation is a very big challenge. Most people prefer to use simple cash mode of transaction and shy away from digital channels like mobile banking. This thinking has impacted the growth of our economy and the dream of financial inclusion. Government agencies, banks, microfinance institutions can join hands to onboard majority of rural and semi urban population on digital channel, thus paving the way for transparent and growth oriented cashless economy. Banks and other financial institutions can hand hold our majority rural/semi urban population and motivate them to use digital channels like mobile banking, through which they can streamline their operations and take benefits of various government welfare schemes. All these efforts can ultimately lead to bank account for every Indian in our country and also a progressive economy.

Contribution/originality

The study contributes to the literature by emphasising on importance of mobile banking services for traders in whole sale commodity market, thus bringing majority of rural population to digitalisation. Previous studies done in this regard were either focussed on customer satisfaction or users and non-users of mobile banking. Also, overwhelming majority of studies have focussed on agricultural commodity markets and credit demands of the farmers. In view of paucity of data, this study was undertaken to provide new perspective on usage and benefits of mobile banking services to the wholesale commodity market and farmers.

Funding

The author has not received any specific funding for the given project from any organisation or individual.

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