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ADOPTION OF DIGITAL PAYMENTS IN RURAL INDIA: A REVIEW OF FACTORS AFFECTING INTENTION OF USAGE

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Introduction

Digital payments have seen tremendous growth in India in recent years, demonetization and COVID-19 acted as a boon in this process (Sharma S. , 2019). India was seen as cash-based economy earlier (Patil, Tamilmani, Rana, & Raghavan, 2020) but after demonetization many people shifted from cash to digital payment systems and lockdown in March 2020 due to COVID-19 further led to adoption of digital payments. Payment systems have upgraded from cash to credit/debit card to mobile payments in recent years (Luna, Cabanillas, Fernández, & Leiva, 2018). A lot of fintech companies are coming up which are helping in increasing retail transactions by acting as aggregators (Tiwari, Shrivastava, & Kumar, 2019). A lot of factors have contributed to this proliferation of digital payments such as, digital India policy, various financial inclusion initiatives, accessibility of mobile data, strong wireless network, high internet connectivity, inclination towards technological innovations (Patil, Dwivedi, & Rana, 2017). Digital payment systems have potential to cater large population of India so, National Payments corporation of India (NPCI) - an umbrella organisation for all retail payments in India was established by government of India to fulfil this aim (Patil, Tamilmani, Rana, & Raghavan, 2020). Deepening of digital payment ecosystem has even become one of the prime goals of National Strategy for Financial Inclusion (NSFI) prepared by RBI, its main aim is to strive towards providing every adult access to a financial service provider through a mobile device by March 2024, financial service providers will be encouraged to intensify virtual outreach through innovative approaches (Reserve Bank of India, 2020). India's payment system is strong, individuals are free to any channel or mobile app provider, it does not matter with which bank they have an account (World Bank, 2020). There are mainly 4 types of digital payment technologies in India such as, PoS devices, internet banking, mobile wallets & UPI (Ligon, Malick, Seth, & Trachtman, 2019).

According to PwC (2020), India study, user base of digital payments in India will expectedly reach 300 million by 2022. India's UPI, the country's famous payment system was processing 17.9 million digital transactions per month in 2016 and the numbers reached to 1.3 billion per month in 2020 (World Bank, 2020). Despite having more than 604 million internet subscribers out of which 35.26% (213 Mn) are rural subscribers, adoption of digital payments in India is mostly limited to the urban and tech-savvy audience (Singh, 2019)**.** India is the leader in mobile phone and internet usage, yet digital services have not been accepted by people as expected (Hubert, et al., 2019) (Sankar, Dash , & Leepsa, 2018). Ligon, Malick, Seth, & Trachtman (2019) in their study of Jaipur merchants found out that demand side barriers were the main reason for non adoption of digital payments among them.

Larger number of resources have been invested by GoI in developing innovative digital payments landscape for its citizens; but the success is eventually dependent on the user's acceptance and usage of these payment systems. It would be important to understand the willingness of people to adopt digital payment systems so that GoI's initiative for creating "Digital India" can be realized (Deb & Agrawal, 2017).

So, gaining an understanding on the acceptance of digital payment systems become important for conducting this research. Very few studies have focused on the acceptance of digital payments in the Indian rural landscape (Behl & Pal, 2016). Considering the lower acceptance of digital payments among rural population in India (Patil, Rana, & Dwivedi, 2018), this study will attempt to identify the factors influencing its acceptance.

Purpose of the study

The research aims to find out factors relevant for adoption of digital payments in rural India.

Literature Review

Identifying characteristics that cause people to accept and use available information systems is one of the most important topics in the field of information systems (King & He, 2006)**.** Several theories have been proposed for studying innovation acceptance and usage. Simon (2001) defines acceptance as "an antagonism to the term refusal and means the positive decision to use an innovation" (as cited in Taherdoost, 2018, p. 961).

The two most common approaches in the field of user technology acceptance are TAM and UTAUT. (Taherdoost, 2018; Almarashdeh & Alsmadi, 2017) which help in understanding the user perceptions towards using any technology. The TAM constructs have been used in a number of recent studies to investigate the adoption of internet and mobile-related technologies such as m-commerce, mobile banking, and mobile payments (Schierz et al., 2010; Patil et al., 2017). Davis proposed the technology acceptance model (TAM) in 1989 to explain a prospective user's behavioural intention to use a technological innovation, and it has since become one of the most widely used, powerful, and robust models (as cited in King & He, 2006). A lot of studies have adapted TAM to study the factors affecting the adoption and use of technology (Rehman & Shaikh, 2020). It addresses why users accept or reject particular information technology. It identifies the links between system design elements, perceived usefulness, perceived ease of use, attitude toward using, and actual use behaviour, therefore, it is helpful to policymakers and practitioners in evaluating and enhancing user acceptance of information technology (Davis, 1993). Although original TAM ignored several dimensions which were later added to subsequent theories based on TAM to generate more consistent system use predictions (Taherdoost, 2018). Lee & Jun (2007) have highlighted that it does not completely capture why a mobile phone user does not adopt mobile banking (as cited in Senou et al., 2019).

Venkatesh et al. (2003) analysed and contrasted the eight commonly acknowledged models that had previously been utilised in the area of information systems and gave out comprehensive theory known as UTAUT (as cited in Taherdoost, 2018). UTAUT has been further extended to UTAUT2 and several other factors have been added keeping in mind the context of consumer technology use (Venkatesh et.al, 2012). Shivathanu (2018) has highlighted that the suitability of UTAUT model for adoption of digital payments. But voluntariness of use and experience are more relevant in organizational studies but age and gender are considered as suitable MVs for technology adoption model for rural areas (Kishore & Sequeira, 2016). According to studies, perceptions of utility, simplicity of use, and risk aversion all play a role in the degree of mobile banking adoption in rural areas (Behl & Pal, 2016).

Performance Expectancy (PE) of using Digital Payments

People are more likely to use an app if they believe it will help or enhance their performance. (Adesina & Ayo, 2010; Sinha et al., 2018). A person adopts a new idea, service or a product if he/she thinks that it is more beneficial than the current one (Wani & Ali, 2015). It is the strongest construct which measures behavioural intention to use moderated by gender and age, it has been derived from factors such as job-fit, perceived usefulness, relative advantage, extrinsic motivation and outcome expectations (Venkatesh et al., 2003; Patil et al., 2020). Perceived Usefulness is found to be core factor to intention of adopting mobile banking in Malaysia (Rehman & Shaikh, 2020). Performance expectancy and perceived usefulness came out as the main factors of adoption of digital payments (Patil et al., 2017). Chauhan (2015) also in line with the previous findings highlighted in her study that one of the most important factors of adoption of m-money among poor people is perceived usefulness.

Effort expectancy (EE) of using Digital Payments

Davis (1989) stated that when individuals realize that the use of a technology requires minimum effort, they realize that they can take advantage of it. According to Plouffe et al. (2001) & Venkatesh et al. (2003), EE has been derived from PEOU, complexity and ease of use (as cited in Kishore & Sequeira, 2016). Users are more inclined to accept an application that is deemed to be easier to use than another (Aderonke & Charles, 2010; Patil et al., 2020). They adopt mobile banking services if they find it easier to use, so demonstrations and trainings are

very important (Kishore & Sequeira, 2016). A study of street vendors conducted by Joshi et al. (2019) highlighted that they find execution of basic features of money transfers and banking via PayTM tough which leads to discontinuation of usage. So, ease of usage seems to be an important aspect of adoption of digital payments. Complexity has negative impact on the adoption of innovation (Wani & Ali, 2015), it leads to non adoption or stoppage of usage of technology (Joshi et al., 2019). It should be simple enough so that adoption rate is high (Wani & Ali, 2015). It directly impacts BI to use moderated by age, gender & experience (Venkatesh et al., 2003).

Social Influence (SI) & Behavioural Intention of using Digital Payments

"Social influence is defined as the degree to which an individual perceives that important others believe he or she should use the new system" (Venkatesh et al., 2003, p. 451). Bongomin et al. (2018) have highlighted the role of social networks in increasing the use of mobile money, service providers, agents should make use of these networks. Lot of researchers have given importance to social influence in adoption of technology (Almarashdeh & Alsmadi, 2017; Patil et al., 2020; Luna et al., 2018). In rural areas lots of people are bonded together so, this construct become more important to study technology adoption (Behl & Pal, 2016). Kishore & Sequeira (2016) also found that people are somewhat influenced by friends and family when adoptiong mobile banking services. It is also moderated by age, gender, voluntariness and experience variables (Venkatesh et al., 2003).

Facilitating Conditions (FC) & Behavioural Intention of using Digital Payments

Facilitating conditions mean that there is supportive technical infrastructure facilitating the use of system/technology. It is one of the biggest facilitators in adoption of digital payments (Pal et al., 2019). Using mobile services such as m-banking etc. require some skills of using phone, internet and if external conditions such as network conditions, demos, online tutorials (Baptista & Oliveira, 2015) etc. are favourable then adoption of m-banking services becomes easy (Deb & Agrawal, 2017). The implementation of digital payment methods was hampered by a lack of high-speed internet access, a low rate of digital literacy among consumers, and a lack of consistent electrical supply (Shivathanu, 2018). Facilitating conditions positively affect the effort expectancy construct as conducive environment makes new innovation easy to adopt for consumers (Patil et al., 2020). They adopt mobile banking services if they find it easier to use, so demonstrations and trainings are very important (Kishore & Sequeira, 2016). Actual usage is directly influenced by FC moderated by age in organizational settings (Venkatesh et al., 2003). But in consumer context it influences BI and actual usage both moderated by age and gender (Venkatesh et al., 2012).

Perceived risk (PR) & Behavioural Intention of using digital payments

PR plays a crucial role in shaping the individuals' beliefs and perceptions, affecting their behaviour and intention to use mobile banking (Rehman & Shaikh, 2020). Perceived risk has been used in technology bases services acceptance studies for a very long time now (Cabanillas, Japutra, Molinillo, Singh, & Singh, 2020). In financial transactions risk is one of the vital hindering factors of adoption (Patil P. , Rana, Dwivedi, & Abu-Hamour, 2018). Determinants of trust and perceived risk are some what similar (Shafinah, Sahari, Sulaiman, Yusoff, & Ikram, 2013). Measuring perceived risk in the acceptance model of mobile services will give better results (Almarashdeh & Alsmadi, 2017). Slade et al. (2015) found that perceived risk is one of the major factors of non-adoption of mobile payments in UK (as cited in Senou, Ouattara, & Houensou, 2019). It has negative impact on BI of rural people which shows their risk perception (Kishore & Sequeira, 2016; Behl & Pal, 2016). As digital payments expose confidential information of consumers, Shivathanu (2018) and Sinha, Majra, Hutchins, & Saxena (2018) have highlighted that digital payments service providers should reduce the privacy and security risks associated with digital payment methods to increase adoption of digital payments. Security is one of the biggest concerns among the poor and illiterate villagers and acts as obstacle in the way of increasing digital financial services (Sankar, Dash , & Leepsa, 2018). Fear of being cheated came out as major factor of non-adoption of digital payment methods in a study of small merchants of Jaipur (Ligon, Malick, Seth, & Trachtman, 2019). GOI can enhance security and privacy to increase trust which leads to adoption of M-banking services

(Deb & Agrawal, 2017). Patil, Dwivedi, & Rana (2017) in their literature review of adoption studies found perceived risk as the biggest hurdle in adoption of digital payments.

Trust and Behavioural Intention of Using Digital Payments

It is important to build trust in banking and financial industry (Rehman & Shaikh, 2020; Ferrata, 2019). Baptista & Oliveira (2015), Cabanillas, Japutra, Molinillo, Singh, & Singh (2020) & Patil, Tamilmani, Rana, & Raghavan (2020) have suggested adding trust in acceptance model as it is very significant construct. It is about personal belief that a user has in the system to carry out a transaction securely and maintain the privacy of personal information (Aderonke & Charles, 2010). As personal and financial information is shared when digital payments take place, trust becomes important to positively influence the intention to adopt digital payments (Shankar & Datta, 2018). It is one of the biggest factors in financial exchange arena which has impact on the intention to use (Patil P. , Rana, Dwivedi, & Abu-Hamour, 2018). It helps in decreasing the perceived risk of transactions (Almarashdeh & Alsmadi, 2017). There should be consumer protection policies so that people feel safe and secure while using digital finance (Tiwari, Shrivastava, & Kumar, 2019; Ferrata, 2019; Bongomin & Mpeera, 2020). Lack of trust has been found as one of the hindering reasons in usage of Paytm by street vendors of India (Joshi, Gupta, & Rangaswamy, 2019). Trust has a significant relationship with risk, as it increases perceived risk decreases (Patil P. , Rana, Dwivedi, & Abu-Hamour, 2018).

Behavioural Intention (BI) and actual usage of digital payments

Behavioral Intention represents the extent of individuals willingness and effort to perform the underlying behaviour. Stronger actual usage is directly influenced by BI (Venkatesh et al., 2003). BI has direct and strong positive effect on actual usage (Venkatesh , Morris , Davis , & Davis , 2003; Patil, Tamilmani, Rana, & Raghavan, 2020).

Venkatesh et al. (2003) had stated that attitude towards use is not required in the acceptance model when constructs like performance and effort expectancies are included. But Chauhan (2015) proved that BI to use will follow once users have attitude to use a particular technology such as m-money. Similarly, Rehman & Shaikh (2020) found that attitude is one of the significant factors in predicting an individual's intention to adopt mobile banking.

Methodology

To help build an understanding of the technology acceptance models with respect to digital payments and related technologies, a review has been done of reputed journal articles, books and various published reports in respect of digital payments. It was tried best to include articles which have tested acceptance theories in India as well. This paper is a working paper and these factors will be empirically tested in rural context.

Findings and Conclusion

UTAUT factors performace expectancy, effort expectancy, social influence and facilitating conditions found to be most suitable for testing acceptance of digital payments in rural India (Sharma & Sharma, 2019). These factors affect the behavioral intention of using digital payments and that ultimately affect the actual use of digital payments. Perecieved risk and trust are among the most common factors which are used to extend UTAUT which affect the intention to use digital payments and will be included in the framework (Al-Saedi & Al-Emran, 2021). But this list is not exhaustive and several other factors can also be taken by researchers according to the scope of the research. It is important to consider different theories together as it helps finding out all the constructs which has impact on any subject (Hubert, et al., 2019). This paper is a working paper and these factors will be tested in rural setting.

References

1. Aderonke, A. A., & Charles, A. K. (2010, April). An Empirical Investigation of the Level of Users' Acceptance of E-Banking in Nigeria. *Journal of Internet Banking and Commerce, 15*(1). Retrieved April

20, 2020, from https://www.researchgate.net/publication/291919261_An_Empirical_Investigation_of_the_Level_of_Users'_Acceptance_of_E_-_Banking_in_Nigeria

2. Almarashdeh, I., & Alsmadi, M. (2017). How to make them use it? Citizens acceptance of M-government . *Applied Computing and Informatics, 13*, 194-199. doi:10.1016/j.aci.2017.04.001
3. Al-Saedi, K., & Al-Emran, M. (2021). A Systematic Review of Mobile Payment Studies from the Lens of the UTAUT Model. In *Recent Advances in Technology Acceptance Models and Theories.* Springer. doi:10.1007/978-3-030-64987-6_6
4. Behl, A., & Pal, A. (2016). Analysing the Barriers towards Sustainable Financial Inclusion using Mobile Banking in Rural India. *Indian Journal of Science and Technology, 9*(15), 1-8. doi:10.17485/ijst/2016/v9i15/92100
5. Cabanillas, F. L., Japutra, A., Molinillo, S., Singh, N., & Singh, N. (2020). Assessment of mobile technology use in the emerging market: Analyzing intention to use m-payment services in India . *Telecommunications Policy, 44*(9). doi:10.1016/j.telpol.2020.102009
6. Deb, M., & Agrawal, A. (2017). Factors impacting the adoption of m-banking: understanding brand India's potential for financial inclusion. *Journal of Asia Business Studies , 11*(1), 22-40. doi:10.1108/JABS-11-2015-0191
7. Ferrata, L. (2019). Digital financial inclusion – an engine for "leaving no one behind". *Public Sector Economics, 43*(4), 445-458. doi:10.3326/pse.43.4.6
8. Hubert, M., Blut, M., Brock, C., Zhang, R. W., Koch, V., & Riedl, R. (2019). The influence of acceptance and adoption drivers on smart home usage. *European Journal of Marketing, 53*(6), 1073-1098. doi:10.1108/EJM-12-2016-0794
9. Joshi, T., Gupta, S. S., & Rangaswamy, N. (2019). Digital Wallets 'Turning a Corner' for Financial Inclusion: A Study of Everyday PayTM Practices in India. In *Information and Communication Technologies for Development. Strengthening Southern-Driven Cooperation as a Catalyst for ICT4D* (Vol. 552, pp. 280-293). Springer, Cham. doi:10.1007/978-3-030-19115-3_23
10. Kishore, S., & Sequeira, A. H. (2016). An Empirical Investigation on Mobile Banking Service Adoption in Rural Karnataka. *SAGE Open, 6*(1), 1-21. doi:10.1177/2158244016633731
11. Ligon, E., Malick, B., Seth, K., & Trachtman, C. (2019, July 31). What explains low adoption of digital payment technologies? Evidence from small scale merchants in Jaipur, India. *PLoS ONE, 14*(7). doi:10.1371/journal.pone.0219450
12. Luna, I. R., Cabanillas, F. L., Fernández, J. S., & Leiva, F. M. (2018). Mobile payment is not all the same: The adoption of mobile payment systems depending on the technology applied. *Technological Forecasting & Social Change, 146*, 931-944. doi:10.1016/j.techfore.2018.09.018
13. Patil, P. P., Rana, N., & Dwivedi, Y. (2018). Digital Payments Adoption Research: A Review of Factors Influencing Consumer's Attitude, Intention and Usage. *International Federation for Information Processing, 11195*, 45-52. doi:10.1007/978-3-030-02131-3_6
14. Patil, P., Dwivedi, Y. K., & Rana, N. P. (2017). Digital Payments Adoption: An Analysis of Literature . *International Federation for Information Processing, 10595*, 61-70. doi:10.1007/978-3-319-68557-1_7
15. Patil, P., Rana, N., Dwivedi, Y., & Abu-Hamour, H. (2018). The Role of Trust and Risk in Mobile Payments Adoption: A Meta-Analytic Review. *Pacific Asia Conference on Information Systems, 129.* Retrieved August 3, 2020, from https://aisel.aisnet.org/pacis2018/129
16. Patil, P., Tamilmani, K., Rana, N. P., & Raghavan, V. (2020). Understanding consumer adoption of mobile payment in India: Extending Meta-UTAUT model with personal innovativeness, anxiety, trust, and grievance redressal. *International Journal of Information Management , 54*. doi:10.1016/j.ijinfomgt.2020.102144
17. PwC. (2020). *The Indian payments handbook – 2020–2025.* PwC. Retrieved October 20, 2021, from https://www.pwc.in/assets/pdfs/consulting/financial-services/fintech/payments-transformation/the-indian-payments-handbook-2020-2025.pdf

18. Rehman, Z., & Shaikh, F. A. (2020, February). Critical Factors Influencing the Behavioral Intention of Consumers towards Mobile Banking in Malaysia. *Engineering, Technology & Applied Science Research*, *10*(1), 5265-5269. Retrieved July 3, 2020.
19. Reserve Bank of India. (2020-21). *Reserve Bank of India Annual Report.* New Delhi: Reserve Bank of India. Retrieved August 10, 2021.
20. Sankar, B., Dash , P., & Leepsa, N. (2018). Is Demonetisation a Bridge for Digital Financial Inclusion? *IIMS Journal of Management Science*, *9*(2), 93-99. doi:10.5958/0976-173X.2018.00009.X
21. Shafinah, K., Sahari, N., Sulaiman, R., Yusoff, M. M., & Ikram, M. M. (2013). Determinants of User Behavior Intention (BI) on Mobile Services: A Preliminary View. *Procedia Technology*, *11*, 127-133.
22. Shankar, A., & Datta, B. (2018). Factors Affecting Mobile Payment Adoption Intention: An Indian Perspective. *Global Business Review*, *19*(3), S72-S89. doi: 10.1177/0972150918757870
23. Sharma, M., & Sharma, S. K. (2019). Theoretical Framework for Digital Payments in Rural India: Integrating UTAUT and Empowerment Theory. In Y. Dwivedi, E. Ayaburi, R. Boateng, & J. Effah (Eds.), *ICT Unbounded, Social Impact of Bright ICT Adoption. TDID 2019. IFIP Advances in Information and Communication Technology* (Vol. 558, pp. 212-223). Springer, Cham. doi:https://doi.org/10.1007/978-3-030-20671-0_15
24. Sharma, S. (2019, December 4). Digital payments boom but rural India in gloom; banks rope in Microsoft to take UPI to masses. *Financial Express*.
25. Singh, S. (2019, June 21). *The Secret To Higher Fintech Adoption In India May Lie In Kenya's M-Pesa Success Story*. Retrieved May 10, 2020, from Inc42: https://inc42.com/datalab/india-needs-to-look-at-m-pesas-success-to-boost-fintech-adoption/
26. Tiwari, T., Shrivastava, A., & Kumar, S. (2019). Adoption of digital payment methods in India. *International Journal of Electronic Finance, 9*(3), 217-229. doi:10.1504/IJEF.2019.099058.
27. World Bank. (2020). *Digital Financial Services.* World Bank. Retrieved May 14, 2020, from http://pubdocs.worldbank.org/en/230281588169110691/Digital-Financial-Services.pdf.