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# *UNDERSTANDING UPI ADOPTION AMONG ELDERLY USERS: A BEHAVIOURAL PERSPECTIVE*

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## INTRODUCTION:

Technology has permeated nearly every aspect of our lives, bringing both challenges and opportunities. In the financial sector, its integration has brought about a paradigm shift, revolutionising how we manage, access, and transact with money. Digital innovations such as online banking, mobile payment systems, and fintech solutions have made financial services more efficient, secure, and accessible to a broader population. In India, the proliferation of the Unified Payments Interface (UPI) has become a cornerstone of the country's financial sector transformation, playing a vital role in its journey towards a cashless economy. UPI facilitates the transfer of money in real time between bank accounts using mobile applications like Google Pay, PhonePe, BHIM, Paytm, and others. Its widespread adoption across the population has revolutionised payment systems and enhanced financial inclusion. While UPI has seen widespread adoption across various demographics in India, the older population remains critical to examine. Understanding their adoption patterns is essential to addressing barriers, fostering digital literacy, and ensuring inclusivity in the digital payment ecosystem. This demographic's participation is pivotal to realising the full potential of a cashless economy. Therefore, in this study, we will try to explore the behavioural aspects that impact the adoption of UPI among elderly individuals.

## REVIEW OF LITERATURE

(Featherman and Pavlou, 2003) studied the perspective of users by considering measures of negative consequences (potential losses) linked to the adoption of e-services. The study incorporates perceived risk into the conceptual framework, highlighting the importance of considering both positive and negative factors in understanding consumer adoption behaviour. The researchers conducted two experiments in this study, the first experiment was conducted to understand the psychometric properties included in the conceptual model with a sample size of 214 respondents and the second experiment was conducted to understand the relation between different types of risks and the validity of the proposed model by analysing data gathered from 157 respondents. The findings suggest

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that the adoption of these types of digital services is primarily hindered due to perceptions of performance-based risks, which are mitigated by the perceived ease of use of these digital services.

(Selwyn et al., 2003) investigated the prevalence and characteristics of Information and Communication Technology (ICT) adoption and usage among elder individuals daily. The study used two data sources: (i) a sample of 352 people over the age of sixty derived through a larger survey on ICT usage in the United Kingdom region with 1,001 respondents, and (ii) follow-up interviews with thirty-five members of this subgroup. The findings show that computer use among older persons is a minority habit heavily impacted by gender, age, marital status, and educational level. In contrast, computer non-use is mostly attributable to a perceived lack of relevance and low "relative advantage" of ICT in their everyday life. This ambivalence stems from the limited integration of ICT into their daily routines and requirements. The analysis emphasises the necessity to close this gap by redirecting efforts. Instead of attempting to adapt older persons to existing ICT usage patterns, the authors propose including them in adapting ICT to meet their preferences and requirements better. The study closes with recommendations for reconsidering political and scholarly perspectives on older persons and technology, emphasising the necessity of promoting greater inclusion and increasing the relevance of ICT for this group.

(Biswas & Biswas, 2004) conducted a series of experimental studies to investigate the varying impacts of three factors namely expenses incurred on promotion, goodwill of the seller and nature of risk with reference to the perception of the consumer, within two distinct shopping environments i.e. online and in-store. Primary data was collected for this study and ANOVA was used for data analysis. Findings from these studies indicate that for goods characterized by high non-technological attributes (such as shirts and shoes), there is a higher perception of risk among consumers when shopping online as compared to offline shopping. Consequently, the results from these studies also suggest that signals serve as more potent risk mitigators online as opposed to offline purchasing contexts for items rich in non-technological attributes.

(Schierz et al., 2010) has examined various factors which impact the mobile payment services acceptance by consumers. Researchers used the extended version of the technology acceptance model to study the consumer acceptance of mobile payment services. The study was conducted in Germany by collecting primary data from 1447 respondents by using stratified sampling technique. Structural equation modelling was used for data analysis. The result from data analysis showed that perceived compatibility has the largest impact on the intention to adopt mobile payment services. The second important factor which played a vital role in mobile payment acceptance came out to be the

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individual's mobility. Also, it was concluded that there is a positive and significant relation between the attitude of users towards payments conducted through mobiles and their intention to use mobile payment technologies.

(Cham et al., 2021) have explored the reluctance of elderly adults to mobile payment services. Although there was a prominent increase in usage caused by COVID-19 measures such as social distancing but still the gap between the younger and older generations in the adoption of digital payments still exists. This study looked into the functional, psychological, and risk factors that contribute to this resistance, as well as the moderating influence of stickiness to currency use. An online survey was done with 400 older adults aged 60 and up, and the results were analysed using SPSS and AMOS software. The study found that functional barriers, psychological barriers, and risk barriers all have a significant influence on resistance to digital payments. This resistance, in turn, influences attitudes and lower adoption intents, with attitude serving as a mediator. Furthermore, the study found that the higher preference for cash as a payment mode also plays the role of moderator between resistance and lower adoption of digital payments among elderly users, emphasising the difficulties in implementing mobile payments among older persons.

Chan et al. (2024) have investigated the obstacles and facilitators of social media technology use among senior citizens living in rural areas of Australia, a group that experiences substantial social separation. Social isolation is an increasing public health problem in rural regions, and although technology has been shown to improve social well-being, many older persons lack the literacy to use technologies that can prevent it. The purpose of this study was to better understand why technology adoption is difficult in rural areas and how it might be encouraged to boost social connectivity. Using the Theoretical Domains Framework and the Behaviour Change Wheel (BCW), the study conducted semi-structured phone interviews with 33 rural older individuals to get insights into their digital and social behaviours. This study found that older Australian individuals living in remote areas are more likely to accept new technology if they think they are physically and intellectually capable, receive enough assistance, and see the advantages outweighing the costs.

**RESEARCH GAP**

The success of UPI has garnered significant global attention, driven by its widespread adoption in India. Over the years, researchers have critically analysed and studied its adoption, uncovering valuable insights into its transformative impact on digital payments (Gupta et al., 2022; Thakkar & Thakkar, 2023). However, there is a notable gap in research focusing on elderly users of UPI, highlighting the need for a deeper exploration of this aspect of UPI adoption. A prominent study addressing this cohort was conducted by Saha

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and Kiran (2022), which identified key factors influencing elderly users' decisions to adopt UPI. However, as this study considered the impact of COVID-19 as a moderating factor, there remains a need to investigate the determinants of continued UPI usage among senior citizens beyond the pandemic context.

**OBJECTIVES**

1. To study the influence of various behavioural factors on the behaviour intention of elderly users with respect to the UPI mode of digital payment.
2. To study the UPI usage behaviour of elderly users.

**METHODOLOGY**

This study is descriptive and is framed around eight constructs adapted from research done by Venkatesh (2012) and Biswas and Biswas (2004). The sample consists of elder UPI users i.e. individuals who are above 60 years of age. Data was collected by conducting a field survey questionnaire completed by 153 respondents from Shimla, Himachal Pradesh, India. Responses were collected with the help of a Likert 7-point scale and multiple statements were given for every variable. Multiple regression was used to analyze the relation between different variables. The behavioural factors examined in this research are outlined below.

**Table 1: Constructs used in this study**

| Factors | Definition | Source |
|---|---|---|
| Performance expectancy | The degree to which UPI usage offers advantages to users in carrying out financial transactions. | (Liao, Palvia, and Lin, 2006) |
| Perceived transaction risk | It refers to the potential losses that could occur as a result of sharing private information, during a UPI transaction. | (Biswas & Biswas, 2004) |
| Social influence | Refers to the extent to which consumers perceive that their close circle, such as friends and family, supports or endorses the use of UPI for digital transactions. | (Venkatesh et al., 2003) |
| Habit | It denotes the degree to which individuals instinctively use UPI due to their prior experience and familiarity with the platform. | (Liao, Palvia, and Lin, 2006) |
| Hedonic motivation | This refers to the enjoyment or sense of satisfaction users experience while using UPI. | (Venkatesh et al., 2012) |
| Facilitating conditions | It is described as the perception or belief of a user that sufficient support, such as technical assistance or infrastructure, is available to facilitate seamless UPI-based transactions. | (Thompson et al. 1991) |
| Effort expectancy | It is the level of ease linked with using UPI. | (Davis, 1989) |
| Behavioural Intention | It refers to the extent to which a consumer has specific intentions to either use or avoid using UPI for digital transactions at a defined point in the future. | (Davis, 1989)<br>(Venkatesh et al., 2003) |

Source: Compiled by authors.

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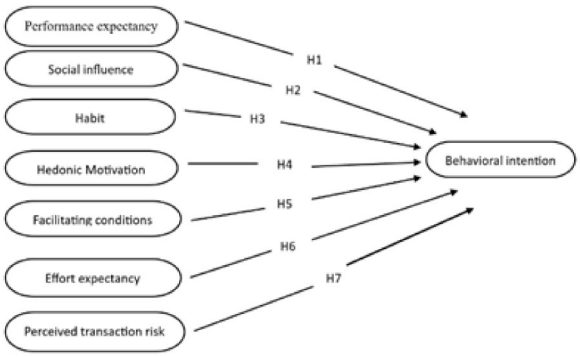
**CONCEPTUAL FRAMEWORK**

The conceptual framework for this study is primarily based on the adoption model developed by Venkatesh, which has been widely used to understand technology acceptance and usage behaviour. To enhance its applicability to the context of UPI adoption among elderly users, an additional construct, Perceived Transaction Risk, was incorporated. This construct, derived from the research conducted by Biswas, addresses users' concerns about the potential risks associated with digital transactions, such as fraud, data breaches, or unauthorized access. By integrating this construct, the framework provides a deeper insight into the factors that impact behavioural intention in the context of UPI adoption. The framework is shown below.

**Figure1: Conceptual Framework**




Source: Adapted from Venkatesh (2012) and Biswas and Biswas (2004).

**SAMPLE PROFILE**

The sample comprises a varied group of respondents, with 83 males (54.6%) and 69 females (45.4%), indicating a relatively balanced gender distribution. In terms of educational qualifications, a significant portion of the respondents (44.1%) hold a Diploma or Graduation degree, making it the most common educational level among the participants. This is followed by 23% who have completed Post Graduation, 17.8% with Higher Secondary education, 12.5% with Secondary education, and a smaller segment (2.6%) holding Doctorate degrees. When it comes to UPI usage frequency, the largest group of respondents (44.1%) use it occasionally, a few times a month, while 29.6% use it regularly, a few times a week. A smaller segment of the population (13.8%) uses UPI very frequently, daily, and 12.5% use it rarely, less than once a month. These patterns suggest that UPI has been widely adopted, but its usage intensity varies significantly across individuals. In terms of preferred UPI applications, Google Pay is the most commonly used platform, chosen by 50.7% of respondents. This is followed by PhonePe, which is used by 40.1% of the participants. Paytm accounts for 5.9%, while 3.3% of respondents primarily use other UPI

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apps. Interestingly, the majority of respondents (84.9%) rely on a single UPI app for their transactions, with only 15.1% indicating they use multiple UPI applications. This highlights a clear preference for specific platforms and a general tendency towards simplicity and convenience in digital payment choices.

**Table 2: Sample Profile**

| Variable | Frequency | Percent |
|---|---|---|
| Gender | | |
| Male | 83 | 54.6 |
| Female | 69 | 45.4 |
| Educational Qualification | | |
| Secondary($9^{th}$/$10^{th}$) | 19 | 12.5 |
| Higher Secondary ($11^{th}$/$12^{th}$) | 27 | 17.8 |
| Diploma/Graduation | 67 | 44.1 |
| Post Graduation | 35 | 23 |
| Doctorate | 4 | 2.6 |
| How frequently do you use UPI for making transactions? | | |
| Daily | 21 | 13.8 |
| Few times a week | 45 | 29.6 |
| Few times a month | 67 | 44.1 |
| Less than once a month | 19 | 12.5 |
| Which UPI app do you use primarily? | | |
| Google Pay | | |
| PhonePe | 77 | 50.7 |
| Paytm | 61 | 40.1 |
| Other | 9 | 5.9 |
| | 5 | 3.3 |
| Do you use multiple UPI apps? | | |
| Yes | | |
| No | 23 | 15.1 |
| | 129 | 84.9 |

Source: Data computed from primary data.

**RESULTS AND DISCUSSION**

The regression model shows a very strong relationship between the independent and dependent variables, with an R-value of 0.935, indicating a high positive linear correlation. An R Square value of 0.874 indicates that 87.4% of the variance in the target variable is accounted for by the causal variables, reflecting a strong model fit to the data.

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**Table 3: Model fit**

| R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|
| 0.935[a] | 0.874 | 0.868 | 2.17774 |

Source: Data computed from primary data.

The regression results provide insights into the significance and direction of the relationships between various factors and the behaviour intention of elderly people to use UPI. Performance Expectancy was observed to exert a strong and statistically significant positive influence on Behaviour Intention (? = 0.362, t = 6.632, p < 0.001), meaning that elderly users who perceive UPI as improving their financial transactions are more likely to adopt it. This finding supports the hypothesis that performance improvements drive technology adoption. On the other hand, Social Influence did not significantly affect Behaviour Intention (? = -0.023, t = -0.692, p = 0.490), suggesting that the opinions or behaviours of others do not have a meaningful impact on elderly users' decisions to adopt UPI. Similarly, Habit (H) (? = 0.027, t = 0.411, p = 0.682) and Hedonic Motivation (? = 0.047, t = 1.180, p = 0.240) were also found to have no significant influence on Behaviour Intention, indicating that habitual use and enjoyment of the UPI system do not drive elderly users' intentions to adopt UPI. The analysis further revealed that Facilitating Conditions (FC) had no significant impact on Behaviour Intention (? = 0.003, t = 0.091, p = 0.927), meaning that external resources and infrastructure are not pivotal in the adoption of UPI by elderly users. However, Effort Expectancy (EE) had a positive and significant effect on Behaviour Intention (? = 0.188, t = 3.910, p < 0.001), indicating that elderly users are more likely to adopt UPI if they find it easy to use. This highlights the importance of simplicity and user-friendliness in encouraging adoption among elderly users. Lastly, Perceived Transaction Risk (PTR) had a strong negative effect on Behaviour Intention (? = -0.412, t = -7.299, p < 0.001), suggesting that higher perceived risks associated with UPI transactions, such as concerns over security and fraud, significantly reduce the elderly users' intention to adopt UPI.

**Table 4: Hypotheses results**

| H | Regression Weights | β | T | p-value | Results |
|---|---|---|---|---|---|
| $H_1$ | PE→BI | .36 | 6.63 | <0.001 | Supported |
| $H_2$ | SI→BI | -.02 | -0.69 | 0.490 | Rejected |
| $H_3$ | H→BI | .02 | 0.41 | 0.682 | Rejected |
| $H_4$ | HM→BI | .04 | 1.18 | 0.240 | Rejected |
| $H_5$ | FC→BI | .003 | 0.09 | 0.927 | Rejected |
| $H_6$ | EE→BI | .18 | 3.91 | <0.001 | Supported |
| $H_7$ | PTR→BI | -.41 | -7.29 | <0.001 | Supported |

Source: Data computed from primary data.

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**CONCLUSION**

In conclusion, the study found that benefits associated with using UPI, ease of using UPI and the potential risk of losing money due to the sharing of personal information are the most important factors influencing behaviour to use UPI among elderly users. Elderly users are more inclined to adopt UPI if they believe it improves their financial transactions and find it user-friendly. However, concerns about transaction risks, such as security, play a key role in hindering adoption. On the other hand, Social Influence, Habit, Hedonic Motivation, and Facilitating Conditions were not significant factors. The findings suggest that to increase UPI adoption among elderly users, efforts should focus on simplifying the user experience and tackling security concerns to foster trust and confidence in the system.

**REFERENCES**

1. Biswas, D., & Biswas, A. (2004). The diagnostic role of signals in the context of perceived risks in online shopping: Do signals matter more on the Web? Journal of Interactive Marketing, 18(3), 30-45. https://doi.org/10.1002/dir.20010
2. Cham, T.-H., Cheah, J.-H., Cheng, B.-L., & Lim, X.-J. (2021). I Am too old for this! Barriers contributing to the non-adoption of mobile payment. International Journal of Bank Marketing, ahead-of-print(ahead-of-print). https://doi.org/10.1108/ijbm-06-2021-0283
3. Chan, C. K. Y., Burton, K., & Flower, R. L. (2024). Facilitators and barriers of technology adoption and social connectedness among rural older adults: a qualitative study. Health Psychology and Behavioral Medicine, 12(1). https://doi.org/10.1080/21642850.2024.2398167
4. Davis, F. D. (1989). Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. MIS Quarterly, 13(3), 319-340. https://doi.org/10.2307/249008
5. Featherman, M. S., & Pavlou, P. A. (2003). Predicting E-services Adoption: a Perceived Risk Facets Perspective. International Journal of Human-Computer Studies, 59(4), 451-474.
6. Gupta, P., Kapoor, K., Bharadwaj, S., & Singh, R. (2022). Behavioural intention and user contentment towards digital payment - A study on UPI amongst Indian Masses. Central European Management Journal, 30(4). https://doi.org/10.57030/23364890.cemj.30.4.195
7. Liao, C., Palvia, P., & Lin, H.-N. (2006). The roles of habit and website quality in e-commerce. International Journal of Information Management, 26(6), 469-483. https://doi.org/10.1016/j.ijinfomgt.2006.09.001
8. Saha, P., & Kiran, K. B. (2022). What insisted baby boomers adopt unified payment

interface as a payment mechanism?: an exploration of drivers of behavioural intention. Journal of Advances in Management Research, 19(5), 792-809. https://doi.org/10.1108/jamr-01-2022-0022

9. Schierz, P. G., Schilke, O., & Wirtz, B. W. (2010). Understanding consumer acceptance of mobile payment services: An empirical analysis. Electronic Commerce Research and Applications, 9(3), 209-216. https://doi.org/10.1016/j.elerap.2009.07.005
10. Selwyn, N., Gorard, S., Furlong, J., & Madden, L. (2003). Older adults' use of information and communications tech-nology in everyday life. Ageing and Society, 23(5), 561-582. https://doi.org/10.1017/s0144686x03001302
11. Thakkar, J., & Thakkar, P. (2023). Digital Payments Revolution: A Study of Awareness, Acceptance, and Usage of Unified Payments Interface Technology Among Selected Women in India. 2022 OPJU International Technology Conference on Emerging Technologies for Sustainable Development (OTCON). https://doi.org/10.1109/otcon56053.2023.10114004
12. Thompson, R. L., Higgins, C. A., & Howell, J. M. (1991). Personal Computing: Toward a Conceptual Model of Utilization. MIS Quarterly, 15(1), 125. https://doi.org/10.2307/249443
13. Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. MIS Quarterly, 27(3), 425-478. JStor. https://doi.org/10.2307/30036540
14. Venkatesh, V., Thong, J. Y. L., & Xu, X. (2012). Consumer Acceptance and Use of Information Technology: Extending the Unified Theory of Acceptance and Use of Technology. MIS Quarterly, 36(1), 157-178.