



DIGITAL PAYMENT REVOLUTION: A COMPREHENSIVE STUDY ON AWARENESS, ACCEPTANCE AND USAGE OF UPI AMONG SENIOR CITIZEN IN THE SELECTED AREAS OF KERALA

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Abstract

NPCI's innovative concept, UPI [Unified Payment Interface], has witnessed high growth in digital payments. Following demonetization in 2016, the acceptance and use of digital transactions have increased rapidly in recent years. UPI emerged as a major driving force in a major shift towards a cashless economy. This paper focuses on the awareness, acceptance and usage of UPI payment systems among senior citizens in selected areas of Kerala. With the increasing pace of digital transactions, understanding how senior citizens interact with these technologies is crucial for fostering financial inclusion and access to financial services. This paper focuses on variables to assess the current state of UPI awareness, acceptance and usage among senior citizens. Key factors, such as technological awareness, trust in digital platforms and the influence of social networks on technology adoption, need to be examined.

Keywords: UPI, Unified Payment Interface, Digital Payments, Senior Citizens

I. INTRODUCTION

In developing countries like India, the advent of digital payment systems has brought about revolutionary changes in the financial landscape. The Unified Payments Interface [UPI], launched by NPCI, has emerged as a game-changer in promoting a cashless economy. The implementation of UPI has led to its massive adoption among different segments of the population. While the younger generations have already embraced digital payment technologies, senior citizens often face unique challenges that restrict their participation.

Kerala has long been recognised for its commitment to education and social development, which positions it as an ideal location for studying trends in digital payment adoption. In spite of all these, there are indicators that senior citizens in Kerala face significant challenges related to digital payment adoption. Despite all this, there are indicators that senior citizens in Kerala face significant challenges related to digital payment usage, including technology adoption and varying levels of financial literacy. Furthermore, the Covid-19 pandemic accelerated the shift to digital transactions, highlighting the need for comprehensive financial strategies that are appropriate for all age groups, especially the elderly who are at risk of being isolated from technological advancements. The rapid digitalisation of financial services presents both opportunities and challenges. While digital payment methods offer convenience, speed and security, the transition from traditional banking to digital methods can be challenging for senior citizens who have spent most of their lives with traditional systems. The UPI system, with its ability to facilitate seamless transactions, represents a critical tool for achieving greater financial inclusion for this demographic. However, to harness this potential, it is essential to understand the underlying factors influencing awareness, acceptance and usage patterns among senior citizens.

II. REVIEW OF LITERATURE

To promote digital payments in India, the Reserve Bank of India (RBI) set up the National Payment Corporation of India (NPCI), with the mandate to develop a low-cost digital payment system (Gochhwal, 2017). This new payment system emerged as a modified version of the traditional banking system and was adopted by the masses after two major changes in India—namely, the Demonetization policy and the global COVID-19 pandemic. A study conducted by Saha and Kiran (2022) concurs with this observation, suggesting that demonetization acted as a catalyst and led to the adoption of mobile payments by Indians. Later, the COVID-19 pandemic further accelerated this trend, acting as the primary driver for UPI adoption among baby boomers. The government's "Digital India" campaign further accelerated it and played a crucial role in the digitalisation of the banking and payment sectors (Fahad & Shahid, 2022). However, people were still hesitant to adopt UPI. To address this, several incentives such as referral bonuses and transactional rewards were introduced, which encouraged customers to adopt mobile payments (Vashistha et al., 2019). The COVID-19 pandemic occurred at a time when the trend of digital transactions was on the rise, forcing the late adopters to adopt digital transactions as they had no other means of transacting. The outbreak of COVID-19 has impacted the Indian

economy to a greater extent, accelerating the adoption of UPI and other digital payments as consumers preferred to stay away from cash (Adhikari et al., 2022). One of the theoretical studies examines and explains the potential of UPI to attract a larger population is examined and explained, revealing that participants educational level influences their adoption of UPI to attract a wider population, revealing that the educational level of participants influences the adoption of UPI (Gupta & Kumar, 2020). Another study explained the growth of smart phones and the spread of internet services in rural areas, which offers a great potential for UPI (Kakadel & Veshne, 2017). A study by Fahad and Shahid's (2022) investigated the factors affecting the adoption and recommendation of the UPI payment system across five Indian cities.

In India, the proportion of senior persons – those aged 60 and above, is projected to increase to 20.8% of the population by 2050, according to the Indian Ageing Report 2023. Despite the increase in elderly population there is still limited research on analysing age-related differences in participation and knowledge that affect senior citizens involvement in digitalisation and India's digital economy (Sen, 2020). Previous research has widely shown the several benefits associated with ICT use among adults. Among the personal benefits, increased access to current affairs and health information fosters social and self perception.. There are also social benefits, such as improved connectivity and social support networks, to strengthen their relationship. Finally, there are practical benefits, as ICT makes everyday tasks, travel, shopping, and finances much easier (Hough & Kobylanski, 2009). This may be due to the widespread penetration of smartphones and high-speed internet access in global markets. According to a study by Chandra (2019), smartphones have emerged as the main means of accessing the internet among the elderly in India . In response to this low adoption rate, efforts have been made to raise awareness and promote technology use among the elderly in India. Notably, the Indian government has been actively advocating for development of technology that is suitable for them, to improve the well being of the elderly and promote an active lifestyle (Kumar & Banerjee, 2020). Although the government is actively promoting ICT adoption among the elderly, there is a significant lack of research on senior citizens' perspectives on technology. Older individuals are a diverse group comprising different interests, educational backgrounds, health conditions, and socioeconomic backgrounds (Lee & Coughlin, 2015). This diversity pose a challenge for researchers studying technology adoption and use within this demographic. Therefore further research is critical to fully understand their perspectives on online banking and technology use (Kumar & Banerjee, 2020). Inclusion of older adults in society remains a widespread challenge, particularly with regard to their financial integration. (Msweli & Mawela, 2021). Previous studies in developing countries reveals two major challenges for older adults, which are limited awareness and access to financial solutions that support them (GPFI, 2019). Digital banking has emerged as a critical tool for financial inclusion in developing countries, especially for marginalised and economically disadvantaged groups (Tay et al., 2022). Despite the exciting potential of digital banking for financial inclusion, the elderly population faces unique challenges in adapting to this rapidly evolving technology. The rapid growth of technology poses a significant barrier for older adults, hindering their ability to adopt digital banking solutions.

III. RESEARCH PROBLEM

Despite the growing emphasis on digital transactions in India, the participation of senior citizens in this technological shift has not been significantly explored. Existing research predominantly focuses mainly on youth demographics or general trends, which creates a research gap in understanding the specific experience of senior citizens. The digital gap faced by senior citizens in terms of awareness, acceptance and usage of UPI poses a challenge in achieving comprehensive financial inclusion. Addressing this research gap is essential to develop interventions aimed at seamlessly integrating senior citizens into the digital economy and ensuring their financial independence and active participation.

.Research Questions Identified

- 1)How do senior citizens perceive UPI? What are the factors affecting UPI adoption and usage among senior citizens in Kerala?
- 2)Why senior citizens hesitate to adopt UPI for their financial transaction.

IV. RESEARCH OBJECTIVES

Based on research problem, the objectives taken are

- 1)To assess the level of awareness of UPI among senior citizens in Kerala.
- 2)To analyse the factors influencing the acceptance of UPI by senior citizens.
- 3)To study the usage patterns of UPI among senior citizens.
- 4)To identify barriers and challenges faced by senior citizens in adopting UPI.

V. RESEARCH METHODOLOGY

This Study is analytical in nature.

Sampling Method and Sample Size: -This study employs a stratified random sampling method to ensure representative data collection from different regions of Kerala. Sample size is 150, with 50 respondents from each region, aged 60 and above.

Location of the Study: - The study is conducted across three distinct regions of Kerala- North, Central and South.

Source of Data: - Secondary data obtained from government reports, NPCI publications and journal articles. Primary data is collected through a structured questionnaire.

VI. ANALYSIS AND INTERPRETATIONS

1. Analysis of socioeconomic factors

Socio Economic Factors	North Kerala (%)	Central Kerala (%)	South Kerala (%)	Total (%)
Age				
60 – 69	45	50	48	47.67
70 – 79	35	30	32	32.33
Above 80 years	20	20	20	20.00
Education				
High School Level	35	48	45	42.67
Higher Secondary Level	35	30	35	33.33
College Level	30	22	20	24
Income				
Below 50,000	50	30	40	40
50,000 – 1,00,000	40	50	45	45
Above 1,00,000	10	20	15	15
Experience				
Previous usage of Technology	30	50	40	40

From the above data it is evident that super senior citizens using UPI are comparatively lower compared to other age groups. Majority respondents (42.67%) are high school educated, (45%) having annual income between Rs 50,000 to 1,00,000 and around 40% have experience of technology usage

2. Awareness of UPI Among Senior Citizens

Variable	Awareness Level (%)	Number of Respondents
High awareness	45%	68
Moderate awareness	30%	45
Low awareness	25%	37

The data suggest that while a significant portion (45%) of senior citizens have high awareness, a substantial number still exhibit moderate to low awareness of UPI.

3. Acceptance of UPI among Senior Citizens

Variable	Acceptance Level (%)	Number of Respondents
High acceptance	40%	60
Moderate acceptance	35%	53
Low acceptance	25%	37

The analysis indicates that senior citizens have mixed levels of acceptance, with 40% exhibiting high acceptance, while the remaining display moderate to low acceptance.

4. Factors Influencing UPI Adoption

Factor	High Influence (%)	Moderate Influence (%)	Low Influence (%)	Number of Respondents
Digital Literacy	50%	30%	20%	150
Trust in Technology	40%	35%	25%	150
Internet Access	60%	25%	15%	150
Ease of Use	45%	30%	25%	150

Factors such as internet access (60%) and digital literacy (50%) show the highest influence on UPI adoption among senior citizens.

5. Correlation Analysis

Variable 1	Variable 2	'r'	Interpretation
Awareness Level	Acceptance Level	0.68	Positive moderate Correlation
Acceptance Level	Usage Frequency	0.72	High Positive Correlation
Awareness Level	Usage Frequency	0.55	Positive Moderate Correlation

This table suggest that with increase in awareness level, the acceptance and usage also tends to increase.

Acceptance Level and Socioeconomic Factors

ANOVA Table:

Source of Variation	Sum of Squares (SS)	Degrees of Freedom (df)	Mean Square (MS)	F-value	p-value
Between Groups	120.5	3	40.17	4.56	0.01
Within Groups	800.0	146	5.48		
Total	920.5	149			

The ANOVA results show a significant effect of age group, income, and education on the acceptance level of UPI (p-value < 0.05). This implies that differences in these socioeconomic factors contribute to variations in the acceptance of UPI among senior citizens.

6. Regression Analysis: Factors Influencing Usage Patterns

Variable	Coefficient (B)	Standard Error	t-value	p-value
Constant	1.5	0.25	6.00	0.000
Digital Literacy	0.45	0.10	4.50	0.000
Trust in Technology	0.30	0.08	3.75	0.001
Internet Access	0.55	0.15	3.67	0.002

The regression analysis shows that digital literacy, trust in technology, and internet access significantly influence the frequency of UPI usage among senior citizens, as indicated by the significant p-values (< 0.05). The positive coefficients suggest that higher digital literacy and trust, along with reliable internet access, are associated with increased UPI usage.

Analysis of Barriers Using Descriptive Statistics

Barrier	Mean Score
Digital Literacy Issues	4.2
Trust Concerns	3.8
Initial Setup Difficulty	4.0
Transaction Failures	3.5

The mean scores indicate that digital literacy issues and initial setup difficulties are the most significant barriers faced by senior citizens, followed by concerns about trust and transaction failures.

VII. DISCUSSIONS

This study examined awareness, acceptance, usage, and barriers associated with the adoption of Unified Payment Interface (UPI) among senior citizens in the selected areas of Kerala. From the statistical analysis conducted on the Primary data collected revealed the following key findings.

The analysis reveals that acceptance and usage increase with higher levels of awareness. Socioeconomic factors, such as age, income level, and education of respondents, have a significant impact on the acceptance level of UPI among senior citizens. Previous usage of digital payment technologies also has a strong influence on the acceptance level of UPI. From the analysis, it is shown that digital literacy, trust in technology, and internet access significantly influence the frequency of UPI usage among senior citizens. Positive coefficients indicate that higher digital literacy and trust, reliable internet access, are associated with increased UPI usage. The mean scores indicate that digital literacy issues and initial setup difficulties are the most significant barriers faced by senior citizens, followed by trust concerns and transaction failures. The analysis revealed that while a significant portion of senior citizens have high awareness, a high number still exhibit moderate or low awareness of UPI. The analysis suggests that there is a mixed level of acceptance among senior citizens, with a majority of respondents exhibiting high acceptance, while the rest exhibit moderate or low acceptance. The usage pattern shows that a small segment of senior citizens uses UPI daily, while most respondents use it comparatively less. Factors such as internet access and digital literacy have the highest impact on UPI adoption among senior citizens.

VIII. CONCLUSION

India is rapidly embracing the digital economy, but challenges still remains as the elderly population in India is often overlooked when it comes to adopting any technology-based process. This paper explores the extent to which senior citizens in Kerala have accepted technology adoption, with a specific focus on UPI. Senior citizens acknowledge the potential benefits of UPI; despite recognizing its usefulness, they are generally hesitant to adopt UPI. Awareness of UPI is influenced by socio-economic factors, meaning targeted interventions are needed for different demographic groups. Digital literacy, trust in technology, and internet access significantly influence the frequency of UPI usage among senior citizens. Increasing digital literacy and trust, along with reliable internet access, have influenced the increased use of UPI.

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