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Comparative Study of Consumer Behaviour Towards Various Modes of Electronic Payment in India

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ABSTRACT

The study identifies the factors affecting the usage of digital payment in various parts of India, focusing on consumer behaviour regarding different electronic payment modes. The growth of digital financial services, spurred on by technological innovation, government support, and rising smartphone uptake, means that understanding the regional differences in consumer preferences is critical. Introduction The study is focused on the survey with 50 samples from various geographic locations, data regarding awareness, preference, and behavioural aspects related to electronic payments. Urban consumers preferred to pay via UPI and credit/debit cards, as they are more convenient and most merchants accept them; semi-urban and rural consumers still rely on cash and cash-on-delivery because of security and trust issues, in addition to failing financial literacy. Digital payment preference is influenced by factors such as security, convenience, incentives, and demographic characteristics. India, across all the regions, must focus on creating financially literate cashless consumers through targeted education programs showing the benefits of digitally cashless systems while implementing stricter guidelines and security measures to steer the economy towards cashless payment systems. The paper is followed by policy suggestions that would help make India's digital finance ecosystem more inclusive and efficient.

Keywords: Digital Payments, Consumer Behaviour, Regional Variations, Financial Inclusion, Electronic Payment Adoption.

1. Introduction

India already had a digital payment ecosystem in place before, but it has evolved into one of the largest on the global stage in the last decade, owing to the innovation of the true digital boom that we have witnessed. Given the recent digitisation wave across all sectors, as part of a push by the Indian government for a less-cash economy through initiatives like Digital India, the adoption of electronic payment methods has shot up and is trending at an exponential rate. In this regard, the Unified Payments Interface (UPI), mobile wallets, and digital banking platforms have played an important role in broadening the financial canvas especially in urban and semi-urban regions. But consumer behaviour on these payment methods differs widely in different regions of the country owing to socio-economic, cultural, and infrastructural reasons. Even as urban consumers are quick to adapt to digital transactions, consumers from rural and semi-urban areas face a gradual transition, as they are challenged by insufficient banking infrastructure, low levels of financial literacy, and trust issues with digital transactions. Research to understand regional consumer behaviour is lacking, particularly as digital payment continues to gain acceptance in India. Yet, despite earlier works considering the urban shaping of digital payment adoption, urban and rural differences remain elusive. These differences need to be understood so as to design inclusive digital payment policies that benefit all sections of society. In the research presented in this study, we contribute to the existing literature by comparing consumer preferences and behaviours in electronic payment modes, encompassing available electronic payment approaches and factors influencing the acceptance of digital payment, and barriers to widespread adoption.

Thus, the objectives of the study are to contrast consumer knowledge about and preference for digital payment modes across regions in India, to identify factors that influence consumer behaviour towards electronic payments, to analyse regional attributes in consumer behaviour towards electronic payments, and to provide recommendations on how to boost the adoption and usage of electronic payment methods in India. Therefore, the objective of this study is to find the factors affecting digital payment adoption from the perspective of consumers in developing countries, as numerous prior studies have concentrated on the prospect of organisational digital spending.

2. Review of Literature

Dahlberg, Guo, and Ondrus (2015) provided an in-depth overview of mobile payment adoption, emphasising the role of convenience, security, and financial literacy in shaping consumer preferences. Two years later, Venkatesh, Thong, and Xu (2012) expanded the Unified Theory of Acceptance and Use of Technology (UTAUT) by establishing how demographic characteristics such as education and income levels may contribute to technology adoption in financial transactions. According to Mallat (2007), mobile payment usage is more common among young people and urban settings due to

ease of use and better accessibility. Trends in digital payment adoption in India were explored in a study conducted by Chauhan and Panda (2020), which highlighted how income levels and financial literacy impact consumer behaviour. According to a study by Scholz and Dorner (2022), financial literacy influences digital payment acceptance significantly, and people with lower education levels are less trusting of mobile and card payments. Arango and Welte (2012) pointed out that cash still dominates in some segments of society, including older generations and rural households. For instance, Zhao, Deng, and Zhou (2019) investigated consumer payment preferences in China and found that younger and highly educated consumers tend to prefer mobile payments, whereas older people prefer cash and debit cards. Gupta and Arora (2021) explored digital payments and how they influence financial inclusion and the problems encountered by low-income and rural populations. Bagnall et al. (2016), through their cross-country study, have shown that cash is on the way out, though its persistence can be explained by demographics such as age, income, and financial literacy. Hasan and De Renzis (2020) also focused on the role of fintech innovations in preference for digital payments and stated that the adoption at the beginning came from high-income groups. According to Wang and Lin (2019), perceived convenience, security, and social influence have been identified as critical factors behind mobile payment acceptance. Trust is a powerful determinant of the decision to adopt digital payments (Ozkan and Bindusara 2020), especially for individuals with lower levels of financial education. According to Sinha and Dey (2022), the high level of adoption of e-wallets among the younger generation compared to the older generation shows the need for initiatives in digital financial literacy programs to improve the usage of e-wallets in low-income groups and older populations. According to Dahlberg and Mallat (2021), the dominance of credit/debit cards, a traditional payment method, is being challenged by wallets, as this is especially hyped among young users who find wallets easier and rewarding. Because individuals prefer digital payment adoption according to demographic groups and incentives (Karjaluoto and Shaikh, 2020). Higher-educated citizens are found to be more likely to use online banking and digital payments, which include mobile payments, while lower-educated citizens are using more cash instead (Meijer & Bijlsma, 2018). Gomber, Koch & Siering (2017) found that although digital financial inclusion implementations are underway, rural and low-income populations remain unbanked due to challenges. (2016). There are attempts to transform payment ecosystems and bring in digital payments to the masses, as the fintech solutions are discussed by Arner, Barberis, & Buckley (2016). In their work, Ravikumar and Kumar (2023) focused on digital payment trends in India and their influences, highlighting the importance of government efforts for the facilitation of adoption. In a seminal work on the diffusion of innovations, Rogers (2003) described the process by which emerging technologies like digital payments take hold among various consumer segments over time.

3. Data Analysis:

i. Awareness of Electronic Payment Modes (Across Age, Gender/ Profession and Regions)

This breakdown of payment preferences by demographic factors offers important insights into how things like age, gender, employment status, and geographic region affect financial behaviour and digital payment adoption (Table 1). At the data level, the largest group in the study are individuals aged 21-30 years (35%), then 31-40 years (25%), while under 20 years old (20%) and over 40 years old (20%) are equal. A higher proportion of these users belong to the age group 21–30 years old, which indicates that younger adults are more active in financial transactions, possibly because they have entered the labour market and are more likely to have an interest in advanced technologies, including digital ones. Overall, the gender distribution shows a 55% majority of males, as opposed to 45% females in the sample. This suggests a balanced gender representation that permits gender-specific analyses of payment preferences. Weighted demographic data on the employment status of respondents shows that 45% of them go to work, 30% are students and 25% of them are homemakers. It indicates a sizeable portion of the population who are in the early or introductory stage of financial independence, influencing strong mode payment preferences toward cashless, mobile payments and digital wallets. As for the geographic location distribution, 40% of respondents live in urban areas, whereas semi-urban and rural areas constitute 30%. The urban predominant sample implies a higher chance of exposure to digital payment infrastructure and financial services, while semi-urban/rural areas have a huge scope of further growth barring banking facilities, internet penetration, and financial literacy. The comparison with payment preference reveals some trends based on this demographic insight. It is important to note that credit/debit cards and mobile payments are the preferred payment methods for the younger generation aged 21-30 years compared to older generations, who prefer cash and online banking. On the other hand, male users favour mobile payment and credit/debit cards, while female users prefer using online banking and organising financial management tools. Those who work tend to use credit/debit cards and online banking, while students prefer mobile payments and digital wallets. Income Reports show a mild preference for online banking and cash, indicating their dependency on household financial management tools. In addition, geographic differences are also a key factor in the choice of payment mode. Urban dwellers are far more likely to use credit/debit cards & mobile payments, thanks to greater adoption of financial technology and smoother Internet connectivity. Increasing digital payment adoption through expanding financial literacy, banking infrastructure, and mobile payment accessibility is still a priority in semi-urban and rural populations, which remain more dependent on cash transactions and online banking.

The demographic trends highlight the need for tailored financial inclusion initiatives that consider different age groups, genders, employment statuses, and geographic locations. Based on these findings, digital payment service companies could focus on targeting younger consumers by providing mobile-friendly payment solutions, promoting mobile payments for women by enhancing security standards, or engaging in financial education initiatives in semi-urban and rural areas to speed up the transition to a cashless economy.

Table 1: Awareness of Electronic Payment Modes (Across Age, Gender/ Profession & Regions)

	Demographic Variable	**Percentage**
Age	21-30 years	35%
	31-40 years	25%
	Under 20 years	20%
	Over 40 years	20%
Gender	Male	55%
	Female	45%
Profession	Employed	45%
	Students	30%
	Homemakers	25%
Region	Urban	40%
	Semi-Urban	30%
	Rural	30%

ii. Consumer Preferences for Electronic Payment Methods

Consumer preferences and different forms of electronic payment in various regions of the world study show that people living in urbanised areas with greater access to financial infrastructure pay differently, making much larger use of electronic payments (Table 2). Unified Payments Interface (UPI) tops the digital payment mode of choice with 60% of respondents from urban areas, 50% of respondents from semi-urban areas, and 40% from rural areas. That means UPI adoption is the highest in urban regions, where there is strong smartphone penetration and internet connectivity. The marked preference of UPI among semi-urban and rural areas indicates that real-time, low-cost digital transactions have become a reality across segments, but this has to be complemented with work to drive adoption in the hinterland. 30% of urban users, 25% of semi-urban users, and 20% of rural users prefer credit/debit cards as the mode of payment. Such preference can be explained by safety, cashback options, and urban consumers who have better purchase power. Lower adoption in rural areas indicates limited access to banking services and lower penetration of point-of-sale (POS) terminals in businesses around the area. Favourite Mode of Payments, by Urban, Semi-urban and Rural Consumers. 20% of urban consumers, 15% of semi-urban consumers and 10% of rural consumers are using Mobile Wallets like Paytm, PhonePe, and Google Pay. Mobile wallets are most likely to be used by younger users and those who are comfortable making financial transactions on an app. The gradual decline in preference from urban to rural areas shows that the digitization for financial technology and trust in fintech applications are still a work in progress in lower urbanized areas. 10% of urban respondents, 8% of semi-urban respondents and 5% of rural respondents use Net Banking Its usage is greatest among affluent individuals and corporate users with structured banking portals for high financial transactions. The lower percentage in rural areas indicates that there is poor internet and traditional banking interfaces are complicated, and they have not yet been used by many people. In rural areas, 50% of rural consumers, 30% of semi-urban consumers, and 20% of urban consumers prefer cash on delivery (COD), which continues to be a major choice. Such aspects imply that COD is preferred in rural and semi-urban areas due to trust issues with online transactions, low access to digital banking, and preference for actual cash transactions. Though prepaid digital transactions are much more comfortable for urban consumers, a lot of rural users still prefer cash-based purchases, owing to digital literacy gaps and financial uncertainty. This analysis highlights an important point in that the highest penetration of digital payment in current days lies in urban areas; however, the semi-urban and rural areas are catching up gradually, especially in terms of UPI adoption. Financial literacy initiatives, increased internet access, and improved banking infrastructure in rural areas could catalyse the shift from cash to digital payments even faster. Moreover, boosting security and providing benefits to card and mobile payments could facilitate more acceptance in every state.

Table 2: Preferences for Electronic Payment Methods

Electronic Payment Method	**Urban (%)**	**Semi-Urban (%)**	**Rural (%)**
UPI (Unified Payments Interface)	60%	50%	40%
Credit/Debit Cards	30%	25%	20%
Mobile Wallets	20%	15%	10%
Net Banking	10%	8%	5%
Cash on Delivery (COD)	20%	30%	50%

iii. Factors Influencing Consumer Preferences

The study on various factors driving digital payment adoption in urban, semi-urban, and rural areas highlights significant consumer trends and barriers to digital transactions. In fact, up to 75% of urban users, 70% of semi-urban users, and 60% of rural users say the aspect of security is the most important for them when considering digital payment. The elevated percentage on urban regions demonstrates that clients are more conscious of the perils of cybercrime and require sturdy safety measures associated with their digital trades. Though security is an important consideration among semi-urban and rural users, the lower percentages are suggestive that fears around fraud, unawareness about safety protocols, and distrust in digital systems limits their adoption. Ease of use is another important determinant, with 65% of urban consumers, 60% of semi-urban consumers, and 50% of rural consumers making this a critical factor. The greater preference in urban areas indicates greater exposure to digital transactions, better internet availability and smooth access to a variety of payment products. Semi-urban and rural users may still prefer cash in transactions owing to limited availability of banking infrastructure, intermittent internet availability and lower digital literacy. The influence of incentives moonlighting as a catalyst for digital payment adoption Incentives motivate 55% of urban users, 50% of semi-urban users, and 40% of rural users The decreasing % from Urban to Rural indicates that Fintech firms are focusing more on promoting their products in Urban areas. Expanding these incentives to rural areas could increase digital payment adoption, especially among first-time users. A major obstacle is trust in digital payments, especially in rural areas. 50% of urban consumers trust investing in digital payments in semi-urban and rural areas, reported as 45% and 35%, respectively. The lower confidence in rural areas is due to the concerns over transaction failures, fraud, hidden charges and lack of customer support. If digital payment ecosystem has to grow consumer awareness programs, fraud protection policies and effective grievance redressal mechanisms would need to address these issues. In general, security and convenience are the main drivers of digital payment adoption in all regions; however, trust and incentives would need to be improved, particularly in rural & semi-urban areas. Policymakers, fintechs, and banks need to improve security, provide user-friendly platforms, scale incentive programs, and promote consumer trust through targeted awareness campaigns. Initiatives such as improving digital infrastructure in rural regions and providing comprehensive financial literacy courses for people of all ages can help create a more balanced and inclusive digital payment ecosystem.

Table 3: Factors Influencing Consumer Preferences Across Regions

Factor	**Urban**	**Semi-Urban**	**Rural**
Security	75%	70%	60%
Convenience	65%	60%	50%
Incentives	55%	50%	40%
Trust	50%	45%	35%

4. Conclusion and Policy Recommendations

The paper indicates considerable variation in digital payment preferences based on education, income, gender, and physical location. A significant trend that can be observed here is that as we move up the education and income levels, usage of digital payment methods like credit/debit cards, mobile payments, and online banking rises, but most of the lower-income and less-educated classes are still more reliant on cash due to lack of financial literacy, access to banking infrastructure, and trust in digital platforms. Higher adoption of UPI, credit/debit cards, and mobile wallets among urban consumers indicates better internet reach, digital savviness, and the penetration of banks in these regions. On the other hand, for rural consumers, cash and cash-on-delivery are preferred methods of transaction—which points to a general mistrust in online transactions and limited accessibility to safer banking services. Gender-based differences in online banking and sex differences in mobile payment also consider financial behaviour in relation to gender when developing policies. Security, convenience, incentives, and trust are four pivotal factors that drive the adoption of digital payment across all the demographics. Rural and semi-urban populations remain concerned about security, being less comfortable with digital transactions than urban consumers. A key aspect of this study is convenience, where urban stakeholders can rely on merchants accepting payments online and a good internet connection, while the circus of rural users has an unfinished rush to network territory and digital platforms. Cashback, rebates, and rewards as incentives have proven to be effective in the urban market, leading to the adoption of digital payments, while the same lack of targeted incentives in rural areas is stalling the digital adoption process. Concerns around transaction failures, fraud, and lack of grievance redressal mechanisms lead to significantly lower trust in digital payments in rural areas, which acts as a further barrier to widespread adoption. It is important to expand these financial literacy programs, especially for low-education and low-income individuals. Building trust, ensuring understanding of the safety and security of digital transactions, and increasing awareness of fraud protection measures should be the focus of financial education initiatives. Concerns on financial risk can be solved by strengthening the digital payment security with stricter cybersecurity frameworks, fraud insurance schemes, and faster mechanisms for resolving disputes all of which will help foster greater acceptance. Rural areas need more banking and digital infrastructure that give access to fast internet, banking services, and point-of-sale terminals making it easier for digital transactions to take place. Targeted incentive programs (like cash back deals, zero transaction fees, and digital transaction rewards) for low-income users and first-time adopters can motivate more consumers to make the switch from cash to digital payments. Minimising women's exclusion from digital finance is a challenge that needs to be addressed not just from an inclusion perspective but also to realise the full potential of them as drivers of growth: Gender-sensitive digital payment initiatives are important to increase women's involvement in digital finance, including secure mobile wallets, financial literacy programs designed specifically for women, and improved customer support for digital transactions. Ease of UPI and mobile-based transactions should be promoted further by expanding their acceptance in small

businesses, rural markets, and government services so that both modes become a go-to payment option across all segments. Private-public partnerships between the government, banks, fintech companies, and telecom operators can drive the large-scale adoption of digital payment solutions, enabling digital finance solutions to reach the most backward population.

Policies that encourage digital payment choices for basic services like utility bills, public transport, and government assistance will be needed to reduce cash dependence. Digital subsidies for poorer groups, as well as linking government welfare schemes to mobile banking, can support financial inclusion and bolster the adoption of electronic payments. Building the infrastructure that enables people to access the digital economy by giving them the assurance that business (money and assets) can be carried out safely will also be a part of the process.

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