

Consumer Insights on Digital Currency Adoption (e₹-Retail) in Tamil Nadu

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Abstract: This study examines the knowledge, views, and use of the Digital Rupee (e₹-Retail) among people in Tier-II cities in Tamil Nadu. This is a type of digital currency issued by the Reserve Bank of India. This study used descriptive and analytical methods. This study collected data from 168 people who know about the Digital Rupee in cities such as Madurai, Coimbatore, Trichy, and Salem and delves into the factors influencing adoption, including convenience, security, trust, and ease of use, while also examining the demographic influences on awareness and perception. The findings indicate moderate awareness, primarily fuelled by social media, with shopping and retail purchases being the main purposes of usage. Factor analysis identified four key drivers of adoption: perceived usefulness, transparency and security, ease of use, and trustworthiness. Although demographic variables such as age and gender showed no significant correlation with awareness levels, income influenced confidence in digital payment systems. Challenges such as privacy concerns and limited merchant acceptance were noted. This study recommends enhancing awareness campaigns, boosting digital literacy, expanding offline transaction capabilities, incentivising merchant participation, and strengthening security measures to encourage broader adoption. The Digital Rupee holds significant potential to advance a secure, efficient, and inclusive cashless economy in emerging urban centers.

Keywords: e₹-Retail, Central Bank Digital Currency (CBDC), Financial Inclusion.

Introduction:

The financial landscape has undergone a significant transformation over the past decade owing to technological advancements and digital payment platforms. In this digital era, the Central Bank Digital Currency (CBDC), known as the Digital Rupee or e₹, marks a significant milestone in India's digital economy. The Digital Rupee, issued by the Reserve Bank of India (RBI), is a sovereign-backed digital currency designed for secure, efficient, and transparent payments. More than 100 countries are exploring or piloting CBDC use. Countries such as China (Digital Yuan), the Bahamas (Sand Dollar), and Nigeria (eNaira) have already launched digital currencies, signaling a global shift toward centralised digital money. India's Digital Rupee aims to enhance transactional efficiency, reduce cash-handling costs, strengthen payment security, and promote financial inclusion. This study examines the awareness, perceptions, and adoption intentions regarding the Digital Rupee in Tier-II cities in Tamil Nadu. It also investigates the factors influencing user acceptance, such as convenience, security, trust, social influence, and ease of use, to understand the perceived benefits and challenges.

Types of Digital Rupee

The Reserve Bank of India has classified the Digital Rupee into two categories:

1.Retail CBDC (e₹-R)

Retail CBDCs are intended for individual users, including citizens, small enterprises, and merchants, to facilitate transactions such as shopping, bill payment, and money transfer between peers. They enable person-to-person (P2P) and person-to-merchant (P2M) transactions through digital wallets provided by the participating banks.

2. Wholesale CBDC (₹- W)

The Wholesale CBDC is intended for institutional use and interbank transactions, with the goal of enhancing the efficiency of securities settlement, monetary policy implementation, and the management of large-value transfers. This version has the potential to significantly reduce settlement risks, cut operational costs, and reduce reliance on intermediaries.

Participating Banks in the Retail Digital Rupee (₹-retail):

Commercial banks are vital for implementing and ensuring access to the Digital Rupee (₹-Retail). This retail Central Bank Digital Currency (CBDC) operates within a two-tier framework: the Reserve Bank of India (RBI) issues and redeems the digital currency, while banks handle distribution, wallet services, customer onboarding, and transaction management. Banks enable transactions using ₹ wallets on mobile devices, similar to UPI or mobile wallet transactions. From 2023 to 2025, the Digital Rupee (₹-Retail) circulation rose significantly, with the volume increasing from 17.1 lakhs to 494.1 lakhs and the value from ₹16.4 crores to ₹1,016.5 crores. Distributed by selected banks, the Retail Digital Rupee (₹-R) involves wallet infrastructure, transaction processing, and merchant system integration. The next section outlines the role of each bank.

Review Of Literature

Based on the identified research gap, 85 articles were reviewed, and 21 were selected for relevance. The objectives were framed accordingly. The selected articles were from Scopus (5), EBSCO (4), UGC-CARE (7), and peer-reviewed journals (5)

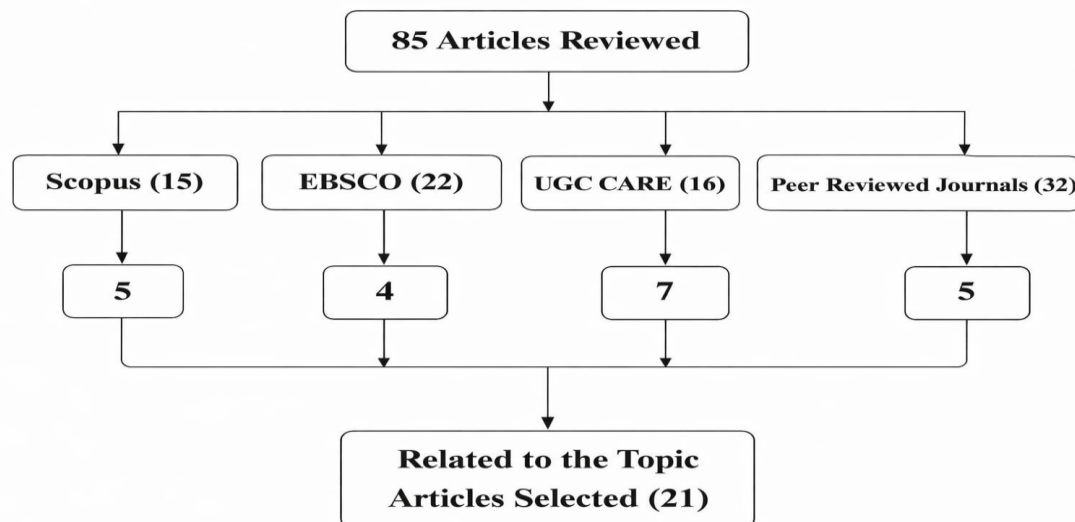


Figure 1: Framework of Literature Review

Raman et al. (2025) found low CBDC awareness in Chennai, with curiosity about security and incentives. Existing UPI habits hinder its adoption. Awareness drives and merchant integration are necessary for CBDC adoption. Saikrishnan S (2025) noted Coimbatore businesses may adopt CBDC if transaction costs drop, emphasizing local research and business incentives. In Ahmedabad, over half the respondents had heard of the CBDC, but fewer understood its features (Rajan, 2025). Adoption depends on the perceived usefulness, ease, and trust in RBI. Younger, educated users were more receptive to AI. This study recommends literacy campaigns and improved communication. Nanya (2025) evaluated RBI's digital rupee strategy, noting opportunities in monetary policy, cross-border payments, and financial inclusion, while warning of privacy and cybersecurity risks. Phased pilots

and privacy safeguards are crucial, recommending interoperability and regulatory clarity in the process. Deepanjali Kumari (2024) focuses on scalability and accessibility, identifying cost efficiency and reduced cash dependency as opportunities. Government readiness and public trust are critical. Mallesha L (2024) compares the digital rupee with UPI and cryptocurrencies, concluding interoperability is essential. It recommends clear regulations and effective communication. Yashwanth G (2024) analyzes public perception, noting younger consumers are more open, while older groups distrust. Inclusivity and trust in RBI are crucial for adoption. Kavitha S (2024) evaluates bankers' perceptions, finding it innovative but raising concerns about liquidity, deposits, and cybersecurity. Banker acceptance influences adoption. Vinit Varma (2023) examined public awareness and attitudes, emphasizing trust and user-friendly technology. Awareness is low, but willingness to adopt is positive if RBI ensures security and ease. This suggests the need for awareness programs. Tushar (2023) explores CBDC's financial impact, highlighting reduced transaction costs and better monetary control, affecting cashless payments, banking, and transparency. A CBDC could enhance India's fintech competitiveness. The researcher identified a lack of studies conducted in Tier-II cities in Tamil Nadu, which led to an investigation into the Digital Rupee.

Statement Of Problem

The Reserve Bank of India (RBI) has rolled out the Digital Rupee (₹-Retail) as a dependable digital payment system to foster a cashless economy in India. Despite the widespread use of platforms like UPI and mobile wallets, the Digital Rupee's success is contingent upon users' perceptions, trust, and willingness to incorporate it into their daily financial activities. While research on digital currency adoption in India has largely focused on metropolitan regions, Tier II cities have remained unexplored. These cities face obstacles such as digital literacy, technological infrastructure, and ingrained payment habits, which lead to distinct mobile payment adoption patterns in different cities. Understanding how users perceive the Digital Rupee and their willingness to embrace it in Tier II cities is crucial. This study aims to bridge this gap by identifying the barriers and enablers of adoption and proposing strategies to enhance acceptance in these growing urban areas.

Objectives Of The Study

1. To evaluate users' awareness of the Digital Rupee (₹-Retail).
2. To analyse users' perceptions and readiness to adopt the Digital Rupee (₹-Retail).
3. To identify the factors influencing the adoption of the Digital Rupee (₹-Retail) among users and offer suitable suggestions.

Scope Of The Study

This study examines users' awareness, perception, and adoption of the Digital Rupee (₹-Retail) in selected Tier-II cities in Tamil Nadu. It evaluates users' readiness and identifies the key benefits and challenges for retail users. This study is limited to the retail segment.

Methodology

This study adopts a descriptive and analytical methodology to examine users' awareness, perception, usage, and acceptance of the Digital Rupee, utilising both primary and secondary data sources. Primary data were collected through a structured questionnaire directed at retail users, while secondary data were obtained from journals, research articles, reports, RBI publications, websites, and reputable sources, including SBI, Indian Bank, Bank of Baroda, HDFC Bank, ICICI Bank, Canara Bank, Axis Bank, and the Union Bank of India. Convenience sampling was employed to select eight of the 19 banks for relevance. From the initial 200 respondents, 168 who were aware of the Digital Rupee were included, while 32 who were unaware were excluded from the study. The study was conducted in select Tier-II cities of Tamil Nadu, such as Madurai, Coimbatore, Trichy, and Salem, chosen for their digital infrastructure, financial awareness, and technology use. Data analysis was performed using IBM SPSS, Version 22, incorporating descriptive statistics, Garret ranking, correlation, chi-square test, one-way

analysis of variance (ANOVA), and factor analysis. Reliability analysis was conducted to assess the consistency of the questionnaire, and Cronbach's alpha was employed to evaluate reliability. The perception scale (10 items) yielded a value of 0.826, and the adoption scale (eight items) yielded a value of 0.761, indicating reliability. The study is scheduled to be conducted from January 2025 to March 2026.

Discussions:

Table 1: Demographic Profile

Profile	N	MEAN	S. D
Age	200	1.28	0.701
Gender	200	1.77	0.422
Qualification	200	2.41	0.718
Occupation	200	1.55	1.263
Income	200	2.10	0.987
City	200	1.82	0.981

Source: Computed Data

The table shows the respondents' demographics. Average age is 18–25 ($M = 1.28$, $SD = 0.701$). The mean gender score ($M = 1.77$, $SD = 0.422$) indicated that more females than males participated. The mean educational qualification was 2.41 ($SD = 0.718$), showing that most had undergraduate or postgraduate degrees. The mean occupation was 1.55 ($SD = 1.263$), suggesting many were students. The mean annual family income was 2.10 ($SD = 0.987$), indicating low-to middle-income. The average score across cities was 1.82 ($SD = 0.981$), with Madurai having the highest score.

Respondents' Preferences Regarding the Purpose of Using the Digital Rupee

Table 2: The Purpose Of Using The Digital Rupee2

Purpose	R1	R2	R3	R4	R5	Total	Average Score	Rank
Bill or utility payments	3300	2760	1450	280	1050	8840	1768	2
Peer-to-Peer money transfers	1800	4140	750	1200	750	8640	1728	3
Receiving government subsidies	450	660	2150	1800	1575	6635	1327	5
Savings or digital wallet storage	2625	960	2500	2280	250	8615	1723	4
Shopping or Retail purchases	4425	1560	1550	1160	575	9270	1854	1

Source: Computed Data

Table shows mean Garrett scores for Digital Rupee usage. Shopping/retail purchases were the highest at 1854. Bill/utility payments followed at 1768, ranking second. Peer-to-peer transfers were third, with 1728. Savings/digital wallet storage ranked fourth at 1723, indicating a moderate use. Receiving government benefits or subsidies ranked last at 1327, and was the least preferred.

Association Between Age Group And Awareness Level

H_0 (Null hypothesis) - There is no association between age group and awareness level among the respondents.

H_1 (Alternate hypothesis) - There is an association between age group and the awareness level among the respondents.

Table 3: Association Between Age Group And Awareness Level

Age	Awareness Level			Total
	High	Moderate	Low	
18 – 25	44	79	14	137
26 – 35	6	6	0	12
36 – 45	6	7	1	14
Above 46	5	0	0	5
Total	61	92	15	168
Pearson Chi-Square: Chi-Square value 11.914; Df 6; p-value 0.064				
Likelihood Ratio: Chi-Square value 7.045; Df 6; p-value 0.027				

Source: Computed Data

The Pearson Chi-square value was 11.914, with a p-value of 0.064, which is greater than 0.05. Thus, the null hypothesis was accepted, and the alternative hypothesis was rejected. There was no significant association between age and respondents' awareness of the Digital Rupee.

Association Between Gender And Awareness Level

H_0 (Null hypothesis) - There is no association between gender and awareness level among the respondents.

H_1 (Alternate hypothesis) - There is an association between gender and awareness level among respondents.

Table 5 Association Between Gender And Awareness Level

Gender	Awareness Level			Total
	High	Moderate	Low	
Male	14	23	2	39
Female	47	69	13	129
Total	61	92	15	168
Pearson Chi-Square: Chi-Square value 0.989; Df 2; p-value .610				
Likelihood Ratio: Chi-Square value 1.093; Df 2; p-value .579				

Source: Computed Data

From the Table, it is found that the chi-square value is 0.989 and the p-value is 0.610, which is greater than 0.05. Therefore, the null hypothesis was accepted, and the alternative hypothesis was rejected. It is concluded that there is no significant association between gender and awareness level of the Digital Rupee among the respondents

Discussion

- **Awareness of the Digital Rupee:** Social media (40.5%) was the main source of Digital Rupee information, followed by friends and family (23.8%) and banks (18.5%). Digital platforms are key to awareness. The study shows 63.7% can differentiate between Digital Rupee and UPI, while 22.6% are unsure. Most (54.8%) had moderate awareness, indicating a need for better understanding. Chi-square analysis found no significant link between age or sex and awareness ($p > 0.05$).
- **Perception Towards the Digital Rupee** Respondents had a moderately positive view of the Digital Rupee, with 23.8% very confident and 23.8% somewhat confident in digital payments. However, 32.1% were neutral, indicating uncertainty. Most (79.8%) preferred offline functionality for convenience in areas with limited internet access. Respondents valued faster transactions (28.6%), reduced cash handling (22.6%), and enhanced security (20.8%). ANOVA found no significant difference ($p > 0.05$) in perception across gender and city. A significant link between income and confidence ($p < 0.05$) shows financial status affects confidence in digital payments.
- **Readiness and Adoption of the Digital Rupee** SBI is the largest respondent (39.3%) in the Digital Rupee pilot, followed by Indian Bank (13.1%), Bank of Baroda, HDFC (9.5%), ICICI, and Canara Bank (8.3%). The frequency of usage indicated that 35.1% of people used it occasionally, while 23.2% used it daily, suggesting a gradual increase in adoption over time. Garrett Ranking shows shopping and retail are top uses, followed by bill payments and money transfers. Digital Rupee increases convenience (19%) and speeds transactions (18.5%). Respondents reported improved transparency (15.5%) and reduced cash reliance (14.8%). Challenges include privacy concerns (8.3%), limited merchant acceptance (7.7%), and technical issues (5.4%). The chi-square test showed no significant association ($p > 0.05$) between occupation and usage frequency.
- **Factors Influencing Perception and Adoption:** Factor analysis revealed four main factors influencing Digital Rupee adoption: Perceived Usefulness, Transparency and Security, Ease of Use, and Trust. Trust and Future Adoption had the highest factor loading (62.651), emphasising user confidence in reliability and potential. Ease of Use (49.258) underscores the need for user-friendly systems, followed by Transparency and Security (35.007) and Perceived Usefulness (18.355).

Suggestions:

1. To boost public knowledge, government agencies and financial organisations should initiate campaigns, conduct workshops, and offer digital literacy programmes to educate people about the Digital Rupee and improve their comprehension of its characteristics.
2. Enhancing digital literacy for users Organising training sessions and digital literacy initiatives is essential to boost user confidence in mobile payment technologies, especially among those reluctant to embrace new digital payment methods.
3. Broaden Offline Payment Features Considering that a significant number of respondents showed a preference for offline capabilities, it is crucial to focus on enhancing and advocating for the offline payment features of the Digital Rupee to facilitate its increased adoption.
4. Encouraging Merchant Adoption To motivate merchants to adopt Digital Rupee payments, they should be provided with incentives such as rewards, discounts, or cashback deals. By enhancing merchant adoption, the

Digital Rupee can become a more feasible choice for routine transactions, including those in the shopping and retail sectors.

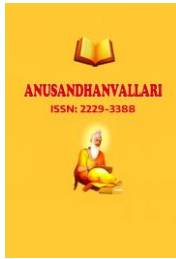
To address user concerns and build trust, it is crucial to consistently update security protocols and privacy measures. This approach ensures the establishment of strong cybersecurity frameworks and transparent data-protection policies

Conclusion

This study aimed to investigate the awareness, perceptions, and behaviours related to the adoption of the Digital Rupee. The results revealed that awareness among participants was moderate, especially among younger demographics, with social media being the primary information channel. Nonetheless, users' perceptions and willingness to adopt the Digital Rupee are heavily shaped by its perceived benefits, ease of use, transparency, and trustworthiness. The study concludes that boosting awareness, enhancing usability, fostering trust, and promoting acceptance among merchants will greatly enhance the adoption rate of the Digital Rupee. With the right policy support and technological progress, the Digital Rupee holds significant promise for advancing a more efficient and transparent cashless economy in India.

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