



## A STUDY ON PROGRESS AND IMPACTS OF CENTRAL BANK DIGITAL CURRENCY (CBDC) IN INDIA- A NEW DIGITAL FINANCIAL INCLUSION

### Finance

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### ABSTRACT

This research examines the development and impact of Central Bank Digital Currency (CBDC) in India. It highlights that the pilot program is currently active with nineteen banks, and two non-bank entities, CRED and MobiKwik, have been authorized to participate. These entities will provide CBDC wallet services to users through the Digital Rupee app of their respective banks, available on the Play Store (Android) and the App Store (iOS). The study also investigates the circulation of the Indian rupee, including e₹ retail and e₹ wholesale. It concludes that CBDC is designed to complement existing monetary systems rather than replace them, offering an additional payment option for users without displacing current methods. Supported by India's advanced and affordable payment infrastructure, which is accessible, convenient, efficient, safe, and secure, the Digital Rupee (e₹) aims to boost India's digital economy, enhance the efficiency of monetary and payment systems, and promote greater financial inclusion. This study finally concluded that improving financial inclusion is a key benefit of digital currency adoption, as it helps eliminate socio-economic barriers and overcome challenges related to connectivity and physical banking infrastructure, thereby increasing participation among previously underserved populations in the financial system.

### KEYWORDS

CBDC, Digital Currency, e-rupee, Financial Inclusion, RBI, India

### INTRODUCTION

India has made significant progress in the field of digital payments. A dedicated law for Payment and Settlement Systems has been enacted to support the structured growth of the country's payment infrastructure. The current state-of-the-art payment systems affordable, accessible, convenient, efficient, safe, secure, and operational 24/7/365 are a source of national pride, often surpassing many developed nations in this sector. Following the pilot launch of the Digital Rupee in the Wholesale segment (e₹-W) on November 1, 2022, the Reserve Bank announced the start of the first retail digital Rupee pilot (e₹-R) on December 1, 2022. This positions India among the leading countries, as most major economies have yet to introduce Central Bank Digital Currency (CBDC). The concept of money has evolved from Commodity to Metallic Currency, to Paper Currency, and now to Digital Currency.

### The Significance of the Study

The e₹ wallet stores the Digital Rupee in a manner similar to a physical wallet or purse that holds physical currency. Currently, e₹ wallets are provided by both banks and non-banks as part of the retail CBDC pilot. These wallets are safe and secure, supported by a comprehensive cybersecurity framework to protect the Digital Rupee within the user's wallet. The e₹ stored in the wallet remains secure even if the mobile device hosting the wallet is lost, as it can be recovered using the same phone number or SIM card on a new device. The e₹ wallet is available and supported on both Android and iOS mobile devices.

### Review of Literature

Dixit, V. et al. (2025) suggest that enhance CBDC adoption by addressing structural enablers. Kiran, B.V. et al. (2026) recommend awareness programs for improving CBDC. Shukla, A. et al. (2024) identify major challenges to CBDC adoption smartphone users. Priyadarshini, D. et al. (2022) offer perspectives on the rapid digitalization occurring in the country. Samudrala, R. S. et al. (2021) recommend key design considerations for CBDC. Razi-ur-Rahim et al. (2026) propose that individuals' intentions regarding CBDC adoption. Ogunmola, G. A. and Das, U. (2024) provided empirical evidence on the factors adopting the digital rupee.

Shekhar, V., et al. (2025) find that the adoption of e-rupee faces challenges due to the dominant presence of existing digital payment systems. Attarde, K., et al. (2025) conclude that CBDC can reduce illegal transactions. Sandhu, K., et al. (2025) reveal that fintech innovation promoting financial inclusion. Ghosh, K., et al. (2026) offer valuable variables that influence CBDC adoption. Haque, M. A., et al. (2023) identify challenges related to developing digital currency infrastructure. Singh, V., et al. (2026) recommend that improve digital financial literacy. Sethapat, V., et al. (2023) discuss the challenges and future directions in this rapidly evolving field.

Kaur, H., et al. (2024) proposed promoting CBDC acceptance. Babu,

S., et al. (2021) found that advantages of CBDC. Ghosh, K., et al. (2025) indicated that CBDC in early stages and unexplored. Ghosh, D., et al. (2025) identified regulatory and technological measures necessary to improve CBDC. Garg, M., Malik, S., and Kumar, P. (2025) discovered that technical, cyber risks, and legal framework are insignificant. Thapliyal, K., et al. (2025) offered financial literacy campaigns. Bapat D., Sharma S. (2026) considering factors such as accessibility, security, and usability. Kumar J., et al. (2025) indicated sustainable economic growth. Desai R., Bhatt K. (2026) indicated that initiatives to accelerate CBDC adoption, as discussed by Shroff S. J., et al. (2026), have demonstrated evidence of CBDC adoption in emerging markets. In this context, the current study focused on examining the impact of CBDC in India.

### RESULTS AND DISCUSSION

The Digital Rupee is the electronic version of our currency that can be used to conduct transactions or store value digitally, similar to how currency notes are used in physical form. Currently in pilot mode, various use cases, underlying technology, and features are being tested and explored. Table 1 shows that the pilot is ongoing with 19 banks and additionally, two non-bank entities CRED and MobiKwik have been permitted to join the pilot and will be extending CBDC wallet services to users in the Digital Rupee app of the respective bank from the Play Store (Android) or App Store (iOS) on mobile device. The table 2 shows that the e₹ in circulation during 2022-23 to 2024-25.

**Table 1 List of Pilot 19 Banks in India**

19 Pilot Banks	Name of the App Android and IOS
SBI	eRupee by SBI
ICICI Bank	Digital Rupee By ICICI Bank
IDFC First Bank	IDFC First Bank Digital Rupee
YES BANK	Yes PAY Next
HDFC Bank	HDFC Bank Digital Rupee
Union Bank of India	Digital Rupee By UBI
Bank of Baroda	Bob World Digital Rupee
Kotak Mahindra Bank	Digital Rupee by Kotak Bank
Canara Bank	Canara Digital Rupee
Axis Bank	Axis Mobile Digital Rupee
IndusInd Bank	Digital Rupee by IndusInd Bank
PNB	PNB Digital Rupee
Federal Bank	Federal Bank Digital Rupee
Karnataka Bank	Karnataka Bank Digital Rupee
Indian Bank	Indian Bank Digital Rupee
IDBI Bank	IDBI eRupee
UCO Bank	UCO Digital Rupee
Bank of Maharashtra	eRupee by Bank of Maharashtra
Bank of India	Bank of India Digital Rupee
Source: Indian Banks' Association	

**Table-2 e₹ in Circulation: e₹ - Retail and e₹ - Wholesale**

Year	(₹ Crore)		
	2022-23	2023-24	2024-25
₹0.50 Paise	0.01	0.09	0.11
₹1 Notes	0.04	0.37	0.46
₹2 Notes	0.06	0.54	0.78
₹5 Notes	0.12	1.37	1.77
₹10 Notes	0.15	2.14	3.06
₹20 Notes	0.23	3.94	6.39
₹Notes	0.39	8.49	16.64
₹100 Notes	0.83	20.73	38.23
₹200 Notes	1.16	32.01	91.33
₹500 Notes	2.71	164.36	857.68
₹2000 Notes	-	-	-
Total e₹-Retail	5.70	234.04	1016.50
e₹-Wholesale	10.69	0.08	-
Total e₹	16.39	234.12	1016.50

Source: Reserve Bank of India.

**CONCLUSION**

This study concluded that CBDC India, with its innovative and successful approach, can assist other nations in unlocking the economic potential of identity, data, and payments on a large scale and foster collaboration with like-minded countries to further advance this domain. Digital currency has the potential to transform the financial sector and bridge existing geographic divides. By seamlessly integrating with legacy systems and enabling interoperability, digital currencies can significantly facilitate trade and economic development across nations. While their real-world impact is substantial, it must be balanced with effective governance to ensure that benefits are accessible to all. This study also emphasized that CBDC is intended to complement rather than replace current forms of money and is designed to provide an additional payment option for users, not to supplant existing payment systems. Supported by India's state-of-the-art payment systems that are affordable, accessible, convenient, efficient, safe, and secure, the Digital Rupee (e₹) will further strengthen India's digital economy, enhance the efficiency of monetary and payment systems, and contribute to greater financial inclusion.

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