



**ORIGINAL RESEARCH PAPER**

**Information Technology**

**A STUDY ON THE EVOLUTION OF THE CENTRAL BANK DIGITAL CURRENCY (CBDC) DIGITAL RUPEE (₹) - AN INNOVATIVE INITIATIVE FOR DIGITAL FINANCIAL INCLUSION IN INDIA**

**KEY WORDS:** Finance, Banking, Digital Rupee(₹), RBI, Central Bank Digital Currency (CBDC), Blockchain Technology, Distributed Ledger Technology (DLT), E-Rupee, RBI, India.

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**ABSTRACT**

The main objective of this study is to analyze the development of India's Central Bank Digital Currency (CBDC), known as the Digital Rupee (₹), and its importance as a vital step towards achieving digital financial inclusion. The study reveals that the efficiency of digital payment systems like RTGS, NEFT, IMPS, and UPI has laid a solid foundation for the acceptance and growth of digital currency in India. Additionally, the Digital Rupee, which is issued by the Reserve Bank of India (RBI), functions as legal tender in its digital format, maintaining the same value as traditional currency. After pilot launches in 2022 and participation from nineteen banks and two fintech companies, it is presently undergoing trials for wider implementation. In conclusion, the Digital Rupee signifies a major transformation in India's monetary system, improving efficiency, accessibility, and inclusion while supporting a modern digital economy. The Digital Rupee marks a significant advancement towards a contemporary, digital financial infrastructure in India. It complements current payment systems and has the potential to accelerate transactions, improve security, and encourage inclusivity, thereby bolstering the nation's digital economy.

**INTRODUCTION**



Source:Reserve bank of India

India has positioned itself as a frontrunner in the implementation of the Central Bank Digital Currency (CBDC), known as the Digital Rupee (₹). The Digital India initiative emphasizes efficiency, transparency, and accessibility, promoting minimal government interference and optimal governance. Over the years, India has made remarkable progress in digital payments, supported by a strong legal framework like the Payment and Settlement Systems Act. The Reserve Bank of India (RBI) launched the wholesale Digital Rupee (₹-W) pilot on November 1, 2022, followed by the retail Digital Rupee (₹-R) pilot on December 1, 2022.

**Indian Digital Rupees (₹)**



Source:Axis Bank

These initiatives have positioned India as a global leader in CBDC adoption. This evolution has been driven by robust payment systems such as RTGS, NEFT, IMPS, and UPI, along with platforms like BBPS and NETC. CBDC represents the next step in this evolution.

**REVIEW OF LITERATURE**

Balasubramanian, S. A et al (2025) established a sustainable framework for the implementation of the digital rupee. Jain, S, et al (2020) presented the idea of digital financialization. Panagariya, A. (2022) examined the digital transformation of finance within India. Desai R, et al (2026) suggested strategies to improve the adoption of Central Bank Digital Currency

(CBDC). Khan FN, et al (2026) explored the impact of perceived risk factors. Alamsyah, A et al (2025) deliberated on effective financial strategies. Górká J (2025) advocated for continuous development through improvements in usage and security. Ceylan, F. (2024) performed a thorough evaluation of CBDC. Li, S. (2026) concluded that legal frameworks are crucial for the governance of Central Bank Digital Currency (CBDC) to maintain monetary discipline. Cumming D, et al (2023) noted that innovations and regulatory developments are perpetually evolving. Falwadiya H, et al (2022) investigated the adoption of blockchain technology. Nefla, D., & Jellouli, S. (2025) identified financial innovations that foster development, risk management, financial stability, digital currencies and blockchain, challenges in digital transformation, and sustainable finance. Fahad S. and Bulut M. (2024) discussed the development and implementation of Central Bank Digital Currencies (CBDCs). El Kalak I. et al. (2026) explored the factors that affect the adoption of CBDCs. Williamson, S. (2022) analyzed the introduction of CBDCs. Chiu, J. et al. (2023) focused on the design aspects of a CBDC. Rossi, S. (2025) identified significant consequences for monetary policy. Zafar, A. (2026) emphasized the limitations present in the pilot environments of CBDCs. Walker, G. A. (2022) discovered that digital systems have a profound impact on the banking and finance sectors. Ozili, P. K. (2023) elaborated on the role of CBDCs. Eichacker, N. (2025) found that the desirability and feasibility of promoting CBDCs are crucial. Nyffenegger, R. (2024) proposed a layer-2 CBDC utilizing a rollout.

Prabhu, S. M. et al. (2025) reported that digital payments have gained immense popularity. Savelli, I. et al. (2024) concluded by pinpointing major sources of risk and their policy implications. Ozili, P. K. (2022) demonstrated the connection between CBDCs and the circular economy. Bindseil, U. et al. (2025) noted a significant increase in the total holdings of central bank money within the economy. Yang, Q. et al. (2023) argued that CBDCs can be instrumental in accelerating green finance. Pham A and Tran H (2025) identified perceived benefits as significant predictors of behavioral intention. Subhadarsini, A. and colleagues (2025) highlighted the importance of collaborative strategies for blockchain-enabled Central Bank Digital Currency (CBDC). Wang, D. and others (2025) discovered that strategic partnerships with merchants can enhance the adoption of CBDC. In this context, the focus is on a study regarding the evolution of the Central Bank Digital Currency (CBDC in India).

**RESULTS AND DISCUSSION**

The study results found that the ₹ can be kept in a digital wallet on mobile devices, akin to how physical cash is stored

in a wallet. Users have the ability to send and receive funds or make payments through person-to-person (P2P) and person-to-merchant (P2M) transactions. Payments can be conveniently made by scanning QR codes, including UPI QR codes. To utilize the Digital Rupee, individuals must download the e-wallet application offered by participating banks or non-bank entities and complete a straightforward registration process. At present, the Digital Rupee is in its pilot phase, which includes 19 major banks such as SBI, ICICI Bank, HDFC Bank, and Punjab National Bank, among others. Furthermore, fintech companies like CRED and MobiKwik have also joined the initiative to broaden access and enhance user experience. The Digital Rupee serves as the digital counterpart of India's physical currency and is issued by the RBI. It maintains the same value as paper currency and offers attributes such as safety, trust, and finality in settlement. Unlike cryptocurrencies, it is fully regulated by the central bank, ensuring both stability and reliability.

**CONCLUSION**

The study concluded that the advancement of India's Central Bank Digital Currency (CBDC), referred to as the Digital Rupee (e₹), represents a crucial move towards realizing digital financial inclusion. India has positioned itself as a frontrunner in the adoption of sophisticated digital payment technologies, bolstered by the Digital India initiative, which emphasizes efficiency, transparency, and accessibility while advocating for minimal governmental interference and optimal governance. The research concluded that the Digital Rupee marks a significant advancement towards a modern, digital financial system in India. It enhances existing payment frameworks and has the capacity to enable transactions that are quicker, safer, and more inclusive, thereby reinforcing the country's digital economy.

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