International Journal of Accounting and Economics Studies, 12 (7) (2025) 655-662

International Journal of Accounting and Economics Studies

Website: www.sciencepubco.com/index.php/IJAES
https://doi.org/10.14419/mctf2t64
Research paper

Central Bank Digital Currency In India: A Paradigm Shift

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Received: October 7, 2025, Accepted: November 15, 2025, Published: November 24, 2025

Abstract

Digital Currency has emerged as a vital tool in major sectors, and now the shift towards small and medium enterprises and Individual payments has transformed our traditional payment system into a digital payment system. Many Countries are planning to use CBDC India as a step ahead in starting its pilot study in major cities at 2 phases. The study aims to understand the acceptance level of CBDC in the payment system, analyse the usage pattern of payment systems in India, and evaluate the paradigm shift of fair, safe, and transparent financial transactions through CBDC. The research methodology applied for the study is analytical, with a systematic sampling being considered for obtaining data. The statistical tool applied to the data is multiple correlation. The study reveals that a majority of merchants, academicians, and stakeholders are not only aware of CBDC but are also prepared to integrate it into their regular financial operations. In contrast, the general public remains neutral regarding its potential to curb black money. The authors also note concerns about the currency's potential volatility and highlight the importance of the RBI ensuring a sufficient adjustment period for widespread public adoption.

Keywords: *CBDC; Correlation; Digital Currency; E-Rupee; Paradigm Shift .*

1. Introduction

The pervasive digitalization of economies brings profound implications for various facets of economic analysis, particularly in the realms of monetary economics and the very essence of money. The colossal data streams stemming from digital activities present novel opportunities and challenges that resonate across societies and the monetary framework. In the realm of monetary economics, there's a longstanding tradition of regarding money as a coordinating instrument, essentially acting as a stand-in for the exhaustive roster of economic transactions. In simpler terms, it functions as society's "memory", encapsulating the entirety of economic exchanges (Kocherlakota & Wallace 1998). However, this conceptual characterization of money doesn't delve into its institutional foundations, which play a pivotal role in determining the welfare implications of the monetary system. Specifically, the inherent network effects in payments (Rochet & Tirole, 2006) and the potential for proprietary data usage make digital currencies a significant source of challenges in terms of competition, privacy, and integrity. In this backdrop, a crucial public discourse has emerged surrounding the introduction of novel forms of central bank money in digital formats and the consequential impact they might have on the overall structure of the monetary system.

Throughout history, technology has consistently acted as a driving force, instigating transformative shifts in monetary and payment systems worldwide. The evolution propelled by Fintech in payment systems has revolutionized the very essence of currency in an unparalleled manner. While virtual forms of currency, like mobile money and e-money, had been present earlier, the introduction of Bitcoin in 2009 marked a paradigm shift in the perception of 'virtual currency. It brought forth a cryptographic manifestation of electronic cash, operating on a blockchain protocol—a decentralized, peer-to-peer distributed ledger technology (DLT) ensuring secure transaction recording across interconnected computers.

Although DLT had been in existence since 1991, it was only with Bitcoin's emergence that the technology was effectively harnessed to construct a peer-to-peer transaction network and pioneer a unique category of cryptographically encrypted currencies, commonly known as cryptocurrencies. Despite functioning in an unregulated domain for an extended period, blockchain-based cryptocurrencies, with sporadic exceptions, failed to gain traction as alternative 'currencies' due to their exceptionally volatile and speculative characteristics.

1.1. Challenges, Risks, and Critical Perspectives on CBDC

Despite the promising potential, the implementation of CBDCs is not without significant challenges and risks. A primary concern is financial disintermediation, where citizens might move their deposits from commercial banks to risk-free central bank digital wallets, potentially

undermining bank lending and financial stability (Infante et al., 2022). This necessitates careful design choices, such as potential holding limits or non-interest-bearing features, to avoid destabilizing the existing two-tier banking system.

Furthermore, as a digital infrastructure, CBDC introduces profound public trust, necessitates robust security frameworks, and ongoing public guidance on digital safety practices and threats. A centralized digital currency represents a high-value target for state and non-state actors, and a successful attack could compromise financial data, freeze transactions, or erode public trust entirely. The environmental impact of the underlying technology, though potentially lower than energy-intensive Proof-of-Work cryptocurrencies, remains a consideration, especially if a blockchain-based model is adopted at a national scale, requiring substantial computational resources for transaction validation and ledger maintenance.

Finally, issues of digital exclusion persist. While CBDCs aim for financial inclusion, they risk marginalizing populations with limited digital literacy, smartphone access, or reliable internet connectivity—a concern that directly intersects with the practical difficulties faced by SMEs and rural users (Foster et al., 2021).

Financial inclusion and declining cash dependence have emerged as interlinked forces reshaping the modern financial ecosystem. As economies move towards digital payment infrastructures, reducing reliance on cash transactions, financial inclusion ensures that marginalized groups are not excluded from this transformation. The adoption of digital platforms and CBDC provides individuals, small vendors, and rural communities with greater access to secure, low-cost, and transparent financial services. Declining cash dependence not only minimizes risks associated with untraceable transactions and black money but also fosters efficiency, accountability, and participation in the formal economy. Together, these trends highlight how digital financial innovations can create a more inclusive and resilient financial landscape.

Of paramount importance to the design of a Central Bank Digital Currency (CBDC) is the feature of remuneration, as its calibration holds significant implications for the banking sector, financial stability, and the implementation of monetary policy in the United States and other developed economies. Potential adverse effects on the banking system, particularly through disintermediation, present substantial risks to financial stability. Furthermore, the cross-border dimensions of CBDCs remain a critical and unresolved area, necessitating further scholarly investigation. Current research and development initiatives by central banks are increasingly focused on microeconomic considerations, including operational architectures, underlying technologies, and privacy safeguards (Auer et al., 2022). A key question within this domain is whether the optimal interest rate on CBDC holdings will diverge from that on reserves. Concurrently, analyses of two-tier monetary systems highlight concerns that CBDC issuance could elevate central bank funding costs, with estimates suggesting an impact of up to 1.5% of GDP, attributed to factors such as bank deposit power externalities and liquidity transformation (Niepelt et al., 2022). The implementation of a CBDC as a new payment system, as contemplated by institutions like the Reserve Bank of India, requires a systematic analysis of its broader implications (Bofinger & Haas, 2020). While the introduction of a digital currency spurs debates regarding competition and innovation, it is also posited to serve as an effective policy tool for enhancing the efficiency and resilience of the payment landscape.

A growing body of literature examines the rationale, design, and implications of Central Bank Digital Currencies (CBDCs). Usher et al. (2021) posit that a CBDC can serve as a potent competition policy tool for payments, arguing that its introduction is necessary to rectify market failures and stimulate competition and innovation within new digital payments markets, thereby supporting a vibrant digital economy. This perspective is echoed by Pavoor and Ajithkumar (2022), who explore the positioning of a potential legal tender CBDC as a rival to private cryptocurrencies, analyzing the distinctions between India's digital rupee and crypto-assets. Concurrently, research delves into critical design trade-offs. Ahnert et al. (2022) model the interplay between financial intermediation, payment choice, and consumer privacy, highlighting the data revelations inherent in digital transactions. This focus on user-centric design is empirically supported by Abramova et al. (2022), whose survey of Austrian residents revealed significant interest in a digital euro alongside a recommendation for more user-centric design features, despite general satisfaction with existing payment systems.

Ozili (2023) provides a comprehensive review of recent CBDC advances, underscoring the need for central bankers to meticulously align design features with policy objectives, including the critical balance between limiting user holdings and allowing unrestricted access. The macroeconomic dimension is further scrutinized through a Dynamic Stochastic General Equilibrium (DSGE) model by Sandner et al. (2020), which analyzes the effects of productivity and monetary shocks on an interest-bearing CBDC. The international ramifications are also a key area of inquiry. Foster et al. (2021) assess the impacts of digital currencies on least-developed countries, warning of potential risks from fragmented regulatory approaches and novel governance structures. Wang and Gao (2023) predict that CBDCs will be a game-changer for the international financial system, potentially leading to a decentralized global network that significantly alters the current financial architecture.

In practice, the Reserve Bank of India (RBI) has adopted a strategic, phased approach to its digital rupee (CBDC-R) pilot. Progressively expanding throughout 2023 and into 2024, the pilot has moved beyond basic P2P and P2M functionality to test advanced features like programmability and offline capabilities. Programmability aims to enhance transparency for targeted government benefits and corporate expenditures, while offline functionality, tested via proximity- and non-proximity-based solutions, seeks to promote financial inclusion in areas with limited internet connectivity. These developments position the CBDC-R not merely as a digital replica of cash but as a smarter instrument with the potential to reduce settlement risk, eliminate interbank reconciliations, and revolutionize both domestic and cross-border payments by enabling direct, real-time transactions between parties, such as Indian importers and American exporters, without traditional intermediaries (RBI, 2023; 2024). This evolution underscores the transformative potential of CBDCs when designed with a clear focus on specific economic and operational objectives.

1.2. Motivations, Design, and Macroeconomic Impact

A significant strand of the literature focuses on the core motivations and design challenges of CBDCs. Auer et al. (2022) emphasize that the design features, particularly remuneration, are vital as CBDCs can affect banking sector stability and monetary policy transmission. This is echoed by Ozili (2023), whose review underscores that central bankers must pay meticulous attention to design to achieve specific policy goals. However, a critical debate emerges regarding the potential disruptive effects. Infante et al. (2022) warn of adverse effects on the banking sector, while Niepelt et al. (2022) analyze the impact on bank funding costs, highlighting the delicate balance required in CBDC architecture.

1.3. CBDC as a Catalyst for Competition and a Counterweight to Crypto

Another central debate positions CBDC as a public-sector response to private digital currency initiatives. Bofinger & Haas (2020) and Usher et al. (2021) argue that a CBDC can be an effective competition policy tool, solving market failures and fostering innovation in

digital payments. This positions CBDC in direct contrast to private cryptocurrencies. Pavoor & Ajithkumar (2022) explicitly frame India's Digital Rupee as a potential rival to cryptocurrencies, aiming to provide a state-backed, stable digital alternative. This theme highlights the tension between harnessing innovation and maintaining monetary sovereignty.

1.4. User Adoption and Cross-border Challenges

The literature also increasingly stresses the importance of user-centric design. Abramova et al. (2022) found that while respondents were satisfied with existing systems, about half were interested in a Digital Euro, recommending a more user-focused design—a concern shared by Ahnert et al. (2022) in their analysis of privacy in the digital economy. Furthermore, a critical and unresolved area of research involves the international dimension. Wang & Gao (2023) predict CBDCs will be a "game changer" for the international financial system but caution that the emerging network could be decentralized and uncoordinated. Foster et al. (2021) add to this by highlighting the unique macroeconomic risks and regulatory challenges for developing countries, pointing to a significant gap in understanding cross-border spillover effects. From the Literature considered, the authors identified that there are very limited working studies available on the Indian e-rupee, and the research gap identified by the authors is to analyze this new transformation in the Indian payment system as a default payment method domestically and internationally, evaluating the awareness about the e-rupee by Academicians, Merchants, and other stakeholders.

This research is motivated by a critical question: What are the primary factors inhibiting the widespread adoption of India's e-Rupee by individuals and merchants? The problem stems from the need to transition users from a landscape of highly convenient and familiar digital payment systems to a novel CBDC. The study will empirically examine the practical implementation hurdles and the socio-behavioral determinants of acceptance that define the current adoption challenge.

This research investigates the transformative role of the Central Bank Digital Currency (CBDC) in reshaping India's financial ecosystem. It seeks to critically examine the socio-technical adoption of the digital rupee, analyze its integration into the complex matrix of existing payment behaviors, and evaluate its capacity to act as a catalyst for a more secure and transparent financial paradigm. Through this tripartite focus, the study aims to deliver a holistic understanding of how CBDC can reinforce financial integrity and redefine digital transactions in India.

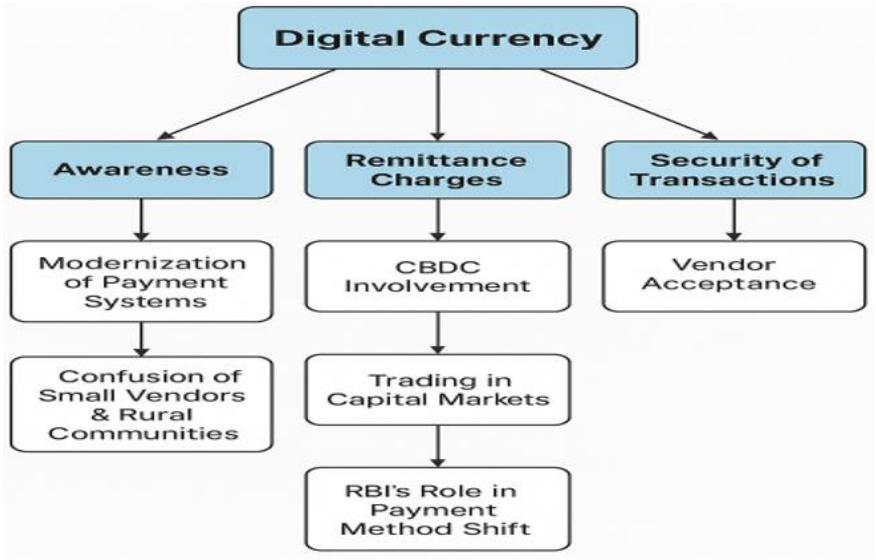

Fig. 1: Conceptual Framework of Digital Currency.

Figure 1 presents the conceptual framework for this study, delineating the postulated relationships between its core variables. The framework posits that the adoption of digital currency enhances transaction traceability, which in turn strengthens financial transparency and governance. This increased transparency is hypothesized as the central mechanism for curbing black money by constraining opportunities for unreported and illicit financial activities. The study empirically investigates this proposed causal pathway by analyzing stakeholder perceptions on the efficacy of digital currency in mitigating black money. Consequently, this framework not only structured the formulation of the research questions but also guided the subsequent data collection and interpretation of the findings.

2. Data and Methodology

The study is based on a systematic sample drawn from the state of Karnataka. The respondents, comprising merchants, academicians, and business professionals, were selected for their familiarity with digital payment platforms. While this provides valuable insights from early-adopter and economically active segments, it inherently limits the generalizability of the findings to populations with lower digital literacy or access, such as rural communities or marginalized groups.

To analyze the interrelationships between key variables, such as awareness, perceived security, and the potential to replace cash, a multiple correlation analysis was conducted. This analysis helps identify the strength and direction of the linear relationships between these variables. The correlation matrix was generated, and the coefficients were calculated to determine which perceptions were most strongly associated with the overall acceptance and expected impact of the E-Rupee.

Data for this study were collected through structured questionnaires administered to a purposive sample of 200 respondents. The sample was composed of professionals with demonstrated familiarity with digital platforms for financial transactions, including merchants, business associates, building contractors, academicians, and stock market professionals. Demographically, 64.3% of respondents were male and 35.7% were female. A significant majority of the participants (85.7%) reported being aware of India's digital currency initiative, confirming the sample's relevance to the research context.

2.1. Research Limitations

In charting the landscape of E-Rupee adoption in India, our research unveils valuable insights tempered by acknowledged limitations. These boundaries, ranging from potential biases to the dynamic nature of technology, offer not constraints but opportunities for future exploration. Our survey, akin to a snapshot, invites subsequent studies to employ diverse methodologies, embracing the ever-evolving canvas of financial evolution in the ongoing narrative of E-Rupee adoption.

While this study offers initial insights into the perceptions of the E-Rupee in India, its findings must be interpreted in light of certain limitations. The primary limitation is the sampling frame. The data was collected from a tech-savvy, professional demographic within a single, relatively developed Indian state (Karnataka). Consequently, the high awareness and optimism levels reported may not be representative of the broader Indian population, particularly in rural areas, among the elderly, or within informal sector economies where digital literacy and access are lower.

This sampling bias means the study likely underestimates the practical challenges and resistance to adoption among these crucial segments. The concerns about confusion among small vendors and countryside communities (as seen in Table 13) are likely more pronounced than our data can capture. Furthermore, the claimed analytical method of multiple correlation, while intended to explore relationships, is constrained by the sample's homogeneity and size. Future research should employ stratified national sampling to ensure all demographic and socio-economic groups are adequately represented.

Finally, as this is a snapshot study of a rapidly evolving policy initiative, perceptions and realities are subject to change. The findings thus represent a baseline understanding at a specific point in time.

3. Results & Discussion

Table 1: Awareness of Digital Currency Among Respondents

Decision	Number of Respondents	Percentage
Yes	172	86%
No	14	7%
Partially	14	7%

Table 2: E-Rupee Can Change the Mode of Payment Among Respondents

Decision	Number of Respondents	Percentage
Yes	186	93%
No	0	0%
Partially	14	7%

Table 1 demonstrates a high level of awareness (85.7%) of digital currency among the surveyed professionals and academicians, establishing a well-informed baseline for the subsequent perceptions. Table 2 reveals a dominant consensus regarding the transformative potential of the E-Rupee, with a strong majority of respondents anticipating a significant paradigm shift in India's payment landscape. The marginal proportion of participants who are only "partially in favour" suggests nuanced reservations or uncertainty about the scale of this change, rather than outright opposition, which is absent from the data. This indicates a broadly shared optimism about the E-Rupee's capacity to redefine payment methodologies.

Table 3: Will Digital Rupee Result in High Security Transactions Among Respondents

Decision	Number of Respondents	Percentage
Yes	176	88%
No	24	12%

The prevailing optimism among respondents (88%) regarding the E-Rupee's capacity for high-security transactions, as indicated in Table 3, requires critical contextualization within the broader landscape of cybersecurity threats facing any centralized digital payment system. Therefore, the project's resilience will depend on a dual strategy: not only deploying robust technological defenses but also launching comprehensive public literacy initiatives to educate users on security best practices.

Table 4: Multiple Correlation Matrix of Key Variables

Variable	Awareness	Perceived Security	Control over payment	Reduction of Black money	Replacement of Cash
Awareness	1.000				
Perceived Security	0.45**	1.000			
Control over payment	0.32*	0.58**	1.000		
Reduction of Black money	0.21	0.39**	0.51**	1.000	
Replacement of Cash	0.28*	0.47**	0.63**	0.55**	1.000

The multiple correlation analysis of Table 4 reveals several significant relationships between the studied variables. For instance, a strong positive correlation was found between the belief that CBDC 'Controls Payment Systems' and its potential to 'Replace Cash' ($r = 0.63$, $p < 0.01$). This suggests that respondents who see the E-Rupee as a dominant payment instrument are also more likely to believe it will supplant physical currency. Similarly, the perception of 'High Security' is moderately correlated with almost all other positive outcomes, indicating it is a foundational trust factor for adoption. Notably, 'Awareness' alone showed weaker correlations, implying that while knowledge is present, it does not automatically translate into strong beliefs about specific outcomes, highlighting the role of other factors like perceived utility and trust.

Table 5: Do CBDC Controls the Domestic and International Payment Systems Among Respondents

Particulars	Number of Respondents	Percentage
Yes	150	75%
No	50	25%

The majority of respondents are confident (Table 5) that the E-Rupee will strengthen transaction security, reflecting a largely positive perception of its technological safeguards. However, a smaller proportion of participants expressed reservations, indicating that while trust in digital currency security is high, concerns and doubts persist among certain groups. Table 4 further reveals that a significant share of respondents believes CBDCs, such as the E-Rupee, play a crucial role in shaping both domestic and international payment systems, underscoring their perceived importance in India's financial infrastructure. Nevertheless, a notable minority disagrees with this view, suggesting a diversity of opinions and highlighting that acceptance of CBDC's comprehensive control is not universal.

Table 5: Does the Digital Rupee Completely Remove Black Money in the Economy Among Respondents

Particulars	No of Respondents	Percentage
Strongly disagree	18	9%
Disagree	12	6%
6Neutral	94	47%
Agree	64	32%
Strongly Agree	12	6%

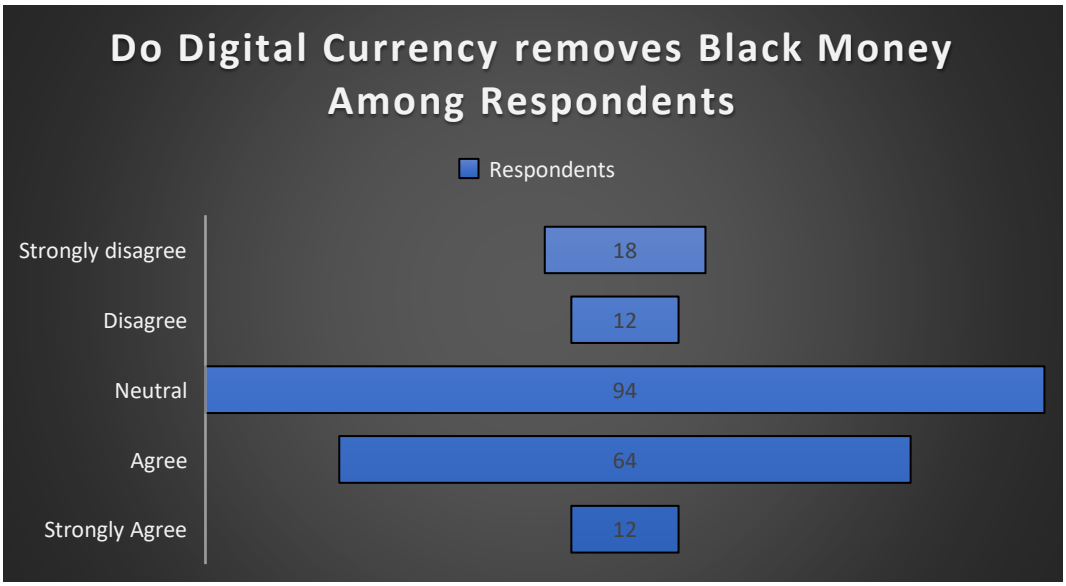

Fig. 2: Removal of Black Money Due to R-Rupee.

Figure 2 indicates a wide distribution of responses, with the largest proportion clustered in the neutral category, highlighting substantial uncertainty among participants. However, the combined number of respondents who agree or strongly agree (76) exceeds those who disagree or strongly disagree (30), suggesting a cautiously optimistic outlook regarding the potential of digital currency to reduce black money, even though skepticism and indecision remain evident among a significant segment of respondents.

Table 6: There are No Remittance Charges for International Payments and Receipts Among Respondents

Decision	No of Respondents	Percentage
True	162	81%
False	38	19%

Table 7: There are no Remittance Charges within Indian Borders Among Respondents

Decision	No of Respondents	Percentage
True	156	78%
False	44	22%

Table 8: Will E-Rupee Make Rupee More Volatile Among Respondents

Particulars	No of Respondents	Percentage
Yes	150	75%
No	50	25%

Table 9: Will E-Rupee be Allowed to Trade in Indian Capital Markets Among Respondents

Decision	No of Respondents	Percentage
Yes	120	60%
No	12	6%
Partially	68	34%

The survey results reveal significant respondent perceptions regarding the Digital Rupee's potential and functionality. As indicated in Table 5, a strong majority (78.1%) agree or strongly agree that the Digital Rupee could be instrumental in reducing black money, though a skeptical minority (15.7%) and a portion of neutral responses suggest persistent reservations or a need for greater policy clarity. Concerning transaction efficiency, Tables 6 and 7 collectively underscore a prevailing belief that the Digital Rupee eliminates remittance charges for both international and domestic transfers, highlighting its perceived cost-effectiveness. Furthermore, while Table 8 demonstrates that awareness of the Digital Rupee's potential tradability in capital markets is not yet universal, Table 9 indicates substantial support (60%) for such financial market integration. This points to a clear expectation among a majority of respondents for the Digital Rupee to evolve beyond a simple payment mechanism and become a fixture within India's broader financial architecture.

Table 10: Digital Currency Will Monetize the Indian Payment System Among Respondents

Decision	No of Respondents	Percentage
Yes	144	72%
No	6	3%
Partially	50	25%

As evidenced in Table 10, a majority of respondents acknowledge the capacity of a digital currency to monetize India's payment systems, indicating a prevalent optimism regarding its transformative potential for the financial ecosystem. Nevertheless, a persistent segment of the sample reported being unaware or only partially aware of this functionality. This discernible knowledge gap underscores the imperative for targeted public literacy campaigns to foster a more comprehensive understanding and facilitate widespread adoption.

Table 11: Will Indian Vendors Accept E-Rupee Payments Among Respondents

Decision	No of Respondents	Percentage
Yes	132	66%%
No	12	6%
Partially	56	28%

The data presents a nuanced outlook on merchant adoption of the E-Rupee. Table 11 indicates that a majority of respondents (66%) believe Indian vendors will accept E-Rupee payments, suggesting a foundation of market optimism. However, this perspective is tempered by the findings in Table 13, which reveal that 60% of respondents anticipate that its introduction will confuse small vendors and rural communities. This dichotomy highlights a critical implementation challenge: while broad adoption is expected, significant onboarding friction is simultaneously recognized.

For Small and Medium Enterprises (SMEs) and rural merchants, the barriers to adoption are multifaceted, extending beyond mere willingness. Key considerations include the cost of acquiring new hardware or software, connectivity constraints—which offline functionality only partially mitigates—and the fundamental usability of the interface. The 28% of respondents in Table 11 who were only 'partially aware' of vendor acceptance likely reflect an intuitive understanding of these underlying impediments. Consequently, the successful integration of the E-Rupee within this vital segment will be contingent not on its technological sophistication, but rather on the capacity of the Reserve Bank of India and financial institutions to deliver a solution that is cost-effective, intuitively designed, and robust in low-connectivity environments.

Table 12: Will Multinational Corporations Receive and Pay in E-Rupee Among Respondents

Decision	No of Respondents	Aware
Yes	156	78%
No	44	22%

The prevalent expectation that Multinational Corporations (MNCs) will transact in E-Rupee (78%, Table 12) presents a dualistic scenario for Small and Medium Enterprises (SMEs). The integration of CBDCs into MNC supply chains could create a compelling, top-down impetus for digital adoption, forcing SMEs to adopt the E-Rupee to maintain their vendor competitiveness. While this may accelerate formalization and efficiency, it concurrently risks exacerbating the existing vulnerabilities of confusion and potential exclusion identified in Table 13. Without robust, targeted support mechanisms, this market-driven pressure could inadvertently marginalize the very SMEs that the Digital Rupee initiative seeks to empower, turning a tool for financial inclusion into a source of competitive disadvantage.

Table 13: Does Digital Rupee Lead to Confusion in Small Vendors and Rural Community Among Respondents

Decision	No of Respondents	Percentage
Strongly disagree	12	6%
Disagree	18	9%
Neutral	50	25%
Agree	94	47%
Strongly Agree	26	13%

The significant level of agreement that the Digital Rupee could generate confusion among small vendors and rural communities (Table 13) empirically substantiates the concerns regarding digital exclusion prevalent in the scholarly literature. This finding indicates that, in the absence of concurrent and targeted policy interventions to bolster digital literacy and infrastructure, the implementation of the E-Rupee risks perpetuating the very financial disparities it is designed to ameliorate.

Table 14: Will it Replace NEFT, RTGS, and Other Payment Methods Among Respondents

Decision	No of Respondents	Percentage
Yes	112	56%
No	88	44%

Table 15: Does Digital Currency Replace Cash Transactions Completely

Decision	No of Respondents	Aware
Yes	106	53%
No	94	47%

The survey findings reveal critical perceptions regarding the Digital Rupee's adoption challenges and transformative potential. As presented in Table 13, a majority of respondents (59.4%) concur that its introduction could generate confusion among small vendors and rural communities, underscoring significant apprehensions about the adaptability of these crucial demographics. This trend continues in subsequent data; Table 14 indicates that merely half of the respondents recognize the Digital Rupee's capacity to supplant traditional payment systems like NEFT and RTGS, suggesting that its systemic potential is not yet widely understood. Furthermore, Table 15 demonstrates that a similar proportion believes it could fully replace cash, yet a substantial degree of uncertainty persists.

Collectively, these findings point to a pronounced need for comprehensive public education to bridge critical awareness gaps and build confidence in the currency's utility.

Table 16: Will RBI Provide Sufficient Time for Payment Method Shift Among Respondents

Decision	No of Respondents	Percentage
Yes	120	60%
No	80	40%

Table 16 reveals that a majority of respondents are cognizant of the expectation for the Reserve Bank of India (RBI) to facilitate a gradual transition to new payment systems. This awareness reflects underlying public confidence in a managed and orderly shift. However, the finding that a persistent minority remains unaware of this expectation underscores a critical gap in communication, pointing to the necessity for more proactive and transparent stakeholder outreach from regulatory bodies.

Table 17: Overview of Digital Currency: E-Rupee Awareness

Question	Yes	No	Partially
Awareness of Digital Currency	172	14	14
E-Rupee can change the mode of Payment	186	0	14
Will the Digital Rupee result in high-security transactions	176	24	
CBDC controls the Domestic and International payment system in India	150	50	
There are no remittance charges for International payments and Receipts	162	38	
Will e-Rupee make the Rupee more volatile	150	50	
Will e-Rupee be allowed to trade in the Indian Capital Markets	120	12	68
Digital Currency will monetize the Indian Payment system	144	6	50
Will Indian vendors accept e-Rupee payments	132	12	56
Will MNCs receive and pay in e-Rupee	156	44	
Will it replace NEFT, RTGS, and other payment methods	112	88	
Digital Currency replaces cash transactions completely	106	94	
Will RBI provide Sufficient time for the Payment method shift?	120	80	

Table 17 synthesizes the core implications of India's digital currency journey as revealed by the survey. The findings underscore that a successful transition is contingent upon nuanced implementation strategies, robust public information dissemination, and sustained transparent communication from regulators. Ultimately, the study's insights provide a critical navigational framework for policymakers, financial institutions, and other stakeholders tasked with steering the adoption of the Digital Rupee through its complex yet promising terrain.

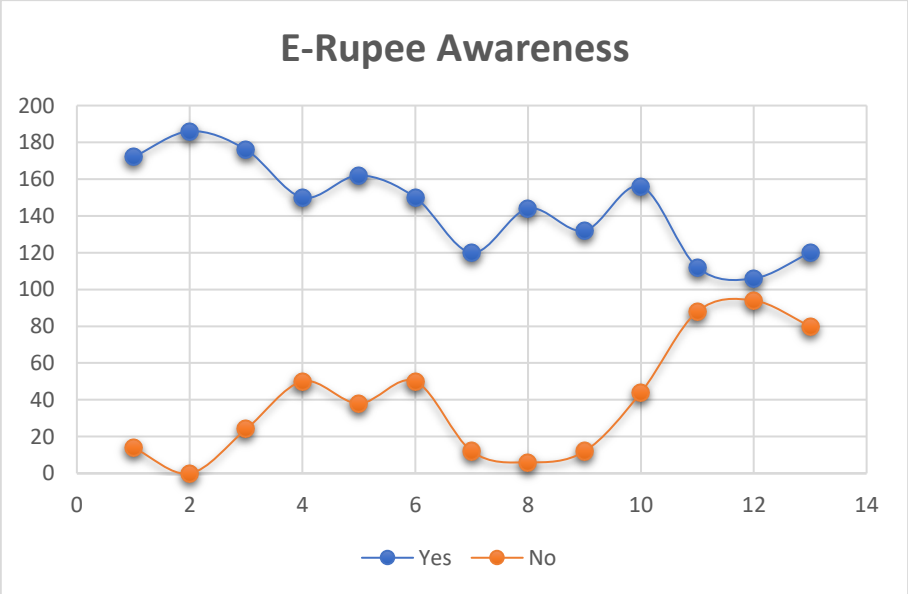

Fig. 3: Graphical Representation of Digital Currency Awareness.

Figure 3 provides a visual analysis of the interplay between public awareness and the perceived utility of the digital rupee. The framework suggests that the populace's extensive prior experience with digital payment modes serves as a crucial evaluative lens, equipping them to gauge the potential success of the CBDC as a universal digital currency.

4. Conclusion

The accelerating pace of digitalization, propelled by the widespread proliferation of smartphones, is compelling a systemic integration of technology across industries and daily life. This has created a fertile ecosystem for digital payment platforms. In a strategic move to monetize efficiency and modernize the economy, the Reserve Bank of India (RBI) has launched a pilot for the full-scale introduction of the e-Rupee. As a direct liability of the central bank, transactions conducted with this digital currency carry the RBI's authoritative trust, unlike physical cash. Consequently, the success of this paradigm shift will depend not only on the technological merits of the e-Rupee but also on the RBI's capacity to proactively mitigate risks—such as bank disintermediation—build resilient cyber defences, and ensure an inclusive transition that leaves no citizen behind.

This study's scope is deliberately focused on the foundational metrics of awareness and applicability. A significant extension of this work would involve the application of AI and ML methodologies to not only forecast the domestic success rate but also to conduct a comparative analysis with the rollout strategies and outcomes of CBDCs in other countries.

Disclosure and Conflict of Interest

The authors have no conflicts of interest to disclose. This research was conducted independently, and no funding was received from any party that could have influenced the design, analysis, or findings of this study.

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