

JVM's Mehta Degree College, Sector 19, Airoli

NAAC Re-accredited "A+" Grade

IQAC in association with Western Regional Centre, ICSSR Organized one day National Conference on "Integrating Multidisciplinary Approaches to Build a Resilient and Sustainable Future", held on 10th January 2026

A STUDY ON CONSUMER PERCEPTION AND IMPLICATIONS OF CENTRAL BANK DIGITAL CURRENCY (DIGITAL RUPEE) WITH REFERENCE TO NAVI MUMBAI**Ashutosh Ramgopal Sharma**

Assistant Professor, JVM's Mehta Degree College

ABSTRACT

The Digital Rupee (₹), India's Central Bank Digital Currency (CBDC), introduced by the Reserve Bank of India, represents a major development in the country's digital financial ecosystem. While the Digital Rupee aims to enhance payment efficiency, security, and financial stability, its success largely depends on consumer awareness, perception, and acceptance. This study examines consumer perception, and adoption intention of the Digital Rupee and its perceived impact on financial stability with reference to Navi Mumbai. Using a descriptive and analytical research design, primary data were collected through a structured questionnaire from retail consumers, supported by secondary data from RBI publications and existing literature. The study seeks to identify key factors such as trust, security, privacy concerns, and perceived usefulness influencing consumer adoption. The findings are expected to provide insights for policymakers, banks, and financial institutions to strengthen awareness initiatives and facilitate informed adoption of the Digital Rupee, contributing to India's evolving digital payment landscape.

Keywords: *Digital Rupee, Central Bank Digital Currency, Consumer Perception, Financial Stability, RBI, Navi Mumbai*

INTRODUCTION

The Digital Rupee (₹) is India's official Central Bank Digital Currency (CBDC), representing the digital form of the physical Rupee (₹) issued and guaranteed by the Reserve Bank of India (RBI). It carries the same trust, security, and settlement finality as physical cash while enabling digital storage and transactions through a wallet-based system. Unlike private cryptocurrencies, the Digital Rupee is a sovereign, regulated currency designed to enhance secure, transparent, and efficient financial transactions.

India's journey toward CBDC began in 2017 with the formation of an Inter-Ministerial Committee under the Ministry of Finance, which recommended the introduction of a digital sovereign currency using advanced technologies. This was followed by regulatory initiatives such as the RBI's regulatory sandbox in 2020 and policy proposals empowering the RBI to issue a programmable digital rupee. Accelerated digital payment adoption during the COVID-19 pandemic further strengthened the need for a resilient and inclusive digital currency framework. The phased rollout of the Digital Rupee was formally announced in the Union Budget 2022, and pilot projects for the Digital Rupee–Wholesale (₹-W) and Digital Rupee–Retail (₹-R) were launched in late 2022.

The Reserve Bank of India (RBI) launched the Digital Rupee pilot in two segments—wholesale (₹-W) and retail (₹-R)—as part of a phased approach to introduce Central Bank Digital Currency (CBDC) in India. The wholesale pilot began on November 1, 2022, focusing on the settlement of government securities in the secondary market to improve efficiency in interbank transactions. This pilot involved select banks and operated within a closed user group, with the Digital Rupee functioning as a legal tender-backed digital token offering safety, trust, and settlement finality.

The retail Digital Rupee pilot was introduced on December 1, 2022, initially in select cities and later expanded to additional locations and banks in phases. Designed to function like physical cash in digital form, the retail ₹ is issued by the RBI and distributed through banks under a two-tier model. It is available in multiple denominations and can be used for everyday transactions. As of June 2023, the pilot recorded over 1.3 million users and 0.3 million merchants, reflecting gradual adoption as the RBI continues to expand the scope of the Digital Rupee.

The introduction of CBDC in India aims to complement existing digital payment systems, reduce currency management costs, enhance transparency, and strengthen financial stability. However, as CBDC is a relatively new concept for the general public, consumer awareness remains limited and perceptions vary widely. Factors

JVM's Mehta Degree College, Sector 19, Airoli

NAAC Re-accredited "A+" Grade

IQAC in association with Western Regional Centre, ICSSR Organized one day National Conference on "Integrating Multidisciplinary Approaches to Build a Resilient and Sustainable Future", held on 10th January 2026

such as trust, security, privacy concerns, technological familiarity, and perceived benefits play a crucial role in influencing adoption decisions.

Navi Mumbai, a technologically progressive and digitally active urban region, provides an ideal setting to study consumer awareness and perception of the Digital Rupee.

With a high concentration of digital payment users across students, professionals, and business owners, the region offers valuable insights into consumer readiness for CBDC adoption. Understanding consumer perception is critical, as widespread acceptance of the Digital Rupee can significantly influence transaction efficiency, monetary transmission, and overall financial stability in India. Accordingly, this study examines consumer awareness, perception, adoption intention, and perceived impact of the Digital Rupee on financial stability with reference to Navi Mumbai.

NEED FOR THE STUDY

The Digital Rupee (e₹), introduced by the Reserve Bank of India, is a major step toward strengthening India's digital payment system and financial stability. Although the RBI has clearly defined the features, benefits, and objectives of CBDC, consumer awareness and understanding remain limited. Many users are still unclear about how the Digital Rupee differs from existing digital payment methods, its safety, and its impact on the financial system. Navi Mumbai, being a digitally advanced urban region, provides an ideal setting to examine consumer awareness, perception, trust, and adoption intention. Since public acceptance is critical for the successful implementation of CBDC, this study is necessary to assess how well consumers understand and accept the Digital Rupee and its perceived implications for financial stability.

SIGNIFICANCE OF THE STUDY

This study helps bridge the gap between the Reserve Bank of India's official policy framework for the Digital Rupee and consumer understanding at the ground level in Navi Mumbai. By identifying awareness levels, misconceptions, and security or privacy concerns, the findings can support RBI, banks, and fintech institutions in improving communication and awareness strategies. The study also contributes a demand-side perspective on how consumer behaviour may influence financial stability, complementing existing macro-level research on CBDCs. Additionally, it provides practical insights for banks and payment service providers to design safer and more user-friendly CBDC adoption strategies. Finally, the study adds to the limited empirical literature on CBDC adoption by offering an India-specific, urban consumer perspective.

OBJECTIVES

- To analyse consumer perception regarding the safety, convenience, and usefulness of the Digital Rupee.
- To analyse impact of the Digital Rupee on India's financial stability.

Hypothesis

- H0: There is no significant level of awareness among consumers regarding the Digital Rupee (e₹).
- H1: There is a significant level of awareness among consumers regarding the Digital Rupee (e₹).
- H0 : The Digital Rupee does not have any significant impact on financial stability.
- H2 : The Digital Rupee has a significant impact on financial stability.

Limitations

1. The study is limited to Navi Mumbai and the findings may not represent other regions.
2. The sample size may be limited due to time and accessibility constraints.
3. Consumer perception may change over time as the Digital Rupee is still in the pilot stage.

REVIEW OF LITERATURE

Bai, Li, and Zhang (2025) examined consumer adoption behaviour in China's digital yuan pilot. The study found that consumers perceived CBDC as convenient and secure but lacked clarity about how it differs from existing digital payment platforms like Alipay and WeChat Pay. This mirrors the Indian scenario, where

JVM's Mehta Degree College, Sector 19, Airoli

NAAC Re-accredited "A+" Grade

IQAC in association with Western Regional Centre, ICSSR Organized one day National Conference on "Integrating Multidisciplinary Approaches to Build a Resilient and Sustainable Future", held on 10th January 2026

consumers frequently ask how Digital Rupee is different from UPI. The study also suggests that perceived usefulness, ease of use, and trust significantly influence CBDC adoption.

Reuters (2025) reported on India's CBDC retail sandbox rollout and noted mixed reactions from early users. While some consumers welcomed Digital Rupee for its official, RBI-backed security, others felt unsure because they perceived no additional benefit compared to UPI. The report indicates a communication gap between policy goals and public understanding, reinforcing the importance of studying consumer awareness in areas like Navi Mumbai.

Corazzini (2024) provides a comparative study of CBDC implementations in multiple countries. The research highlights that successful CBDC adoption depends heavily on public literacy, awareness campaigns, simplicity of use, and perceived safety. Countries with strong communication strategies have higher acceptance rates. This literature supports the rationale behind evaluating consumer awareness and perception of the Digital Rupee.

Laeven et al. (2024) from the European Central Bank explored consumer attitudes toward CBDC in the Eurozone. Their findings showed that although most consumers support the concept of a digital euro, concerns persist regarding privacy, transaction tracking, and cybersecurity. The study reveals that trust in central authorities strongly influences the intention to adopt CBDC. This is important for the Indian context as well, where trust in RBI and clarity of information will determine Digital Rupee acceptance.

IMF (2023) analyzed the financial stability implications of CBDCs and noted both opportunities and risks. While CBDC can improve transparency, reduce fraud, and strengthen monetary transmission, the IMF cautions that rapid or poorly informed consumer adoption may lead to liquidity imbalances or competition with commercial banks. The study emphasizes the need for consumer education so that adoption aligns with policy objectives. This aligns with the current research aim of studying awareness and perception among consumers.

RESEARCH METHODOLOGY

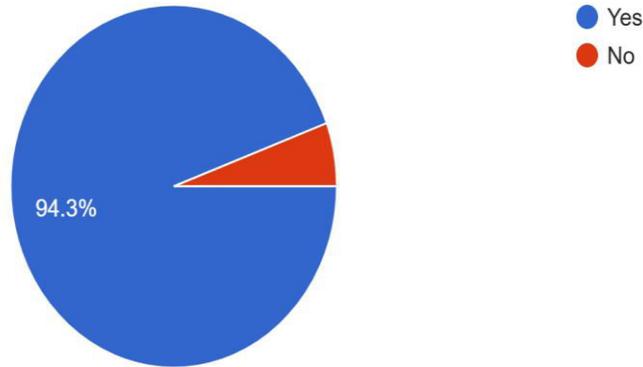
The study follows a **descriptive research design** to analyse consumer perception and the implications of the Digital Rupee (CBDC) in Navi Mumbai. **Primary data** were collected through a structured questionnaire using Google Forms from **194 respondents**, including students, professionals, and business owners. A **convenience sampling method** was adopted due to time and accessibility constraints. The questionnaire consisted of close-ended and 5-point Likert scale questions covering awareness, trust, security, adoption willingness, and perceived impact on financial stability. Data were analysed using **percentage analysis** for clear interpretation.

Secondary data were collected from RBI publications, government reports, research journals, articles, and reliable online sources to understand the concept, framework, and policy aspects of the Digital Rupee. The study is limited to Navi Mumbai and reflects consumer perception at the time of data collection.

DATA ANALYSIS & INTERPRETATION

Are you aware of the Digital Rupee (CBDC) launched by RBI?

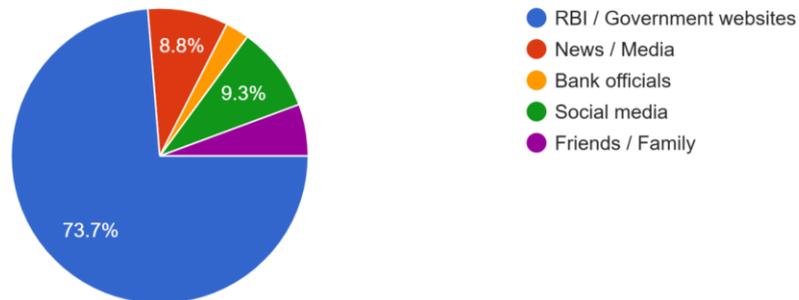
194 responses



The survey shows that **94.33%** of respondents in Navi Mumbai are aware of the Digital Rupee, while only **5.67%** are not. This indicates high public awareness and a strong foundation for future adoption.

What is your main source of information about the Digital Rupee?

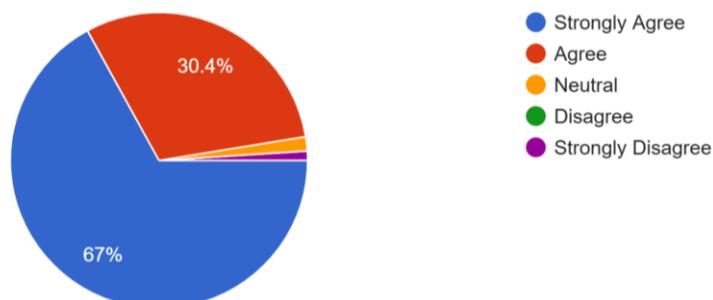
194 responses



The survey shows **73.7%** of respondents rely on RBI/government websites, **9.3%** on social media, **8.8%** on news/media, **6%** from friends or family, and **3%** from bank officials for information on the Digital Rupee, highlighting the importance of both official and informal channels.

The Digital Rupee is an official legal tender issued by RBI.

194 responses



JVM's Mehta Degree College, Sector 19, Airoli

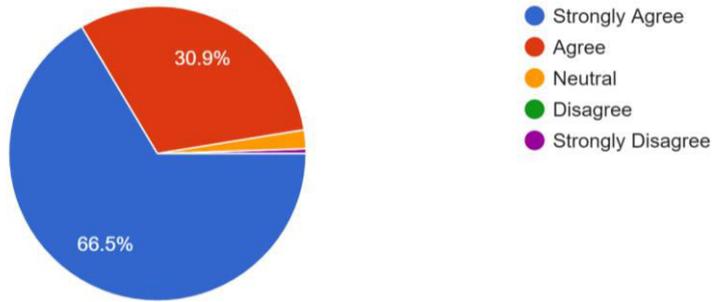
NAAC Re-accredited "A+" Grade

IQAC in association with Western Regional Centre, ICSSR Organized one day National Conference on "Integrating Multidisciplinary Approaches to Build a Resilient and Sustainable Future", held on 10th January 2026

The survey shows **67%** strongly agree, **30.4%** agree, **1.6%** are neutral, and **1%** strongly disagree that the Digital Rupee is an official legal tender issued by the RBI, indicating high consumer trust and recognition of its authenticity.

I believe the Digital Rupee is safer than private digital wallets.

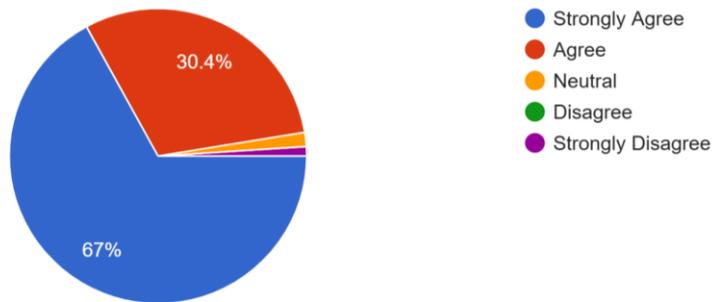
194 responses



The survey reveals that **66.5%** strongly agree, **30.9%** agree, **2%** are neutral, and **0.6%** strongly disagree that the Digital Rupee is safer than private digital wallets, indicating that most consumers in Navi Mumbai trust its security, with minimal skepticism.

I trust RBI to ensure the security of the Digital Rupee.

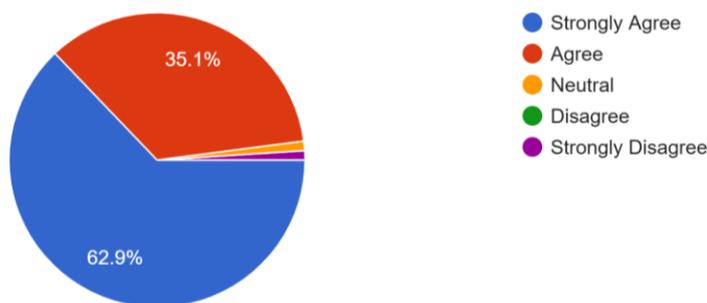
194 responses



The survey shows that a majority of respondents in Navi Mumbai trust the RBI to ensure the security of the Digital Rupee. Specifically, 67% of participants strongly agree, 30.4% agree, 2% are neutral, and only 0.6% strongly disagree. This indicates that overall confidence in RBI's ability to secure the Digital Rupee is very high, though a small fraction of respondents remains cautious.

I am concerned about privacy and government monitoring while using the Digital Rupee.

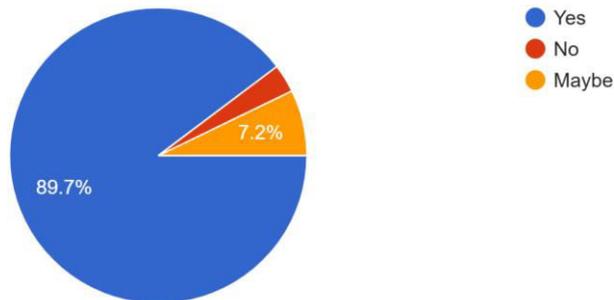
194 responses



Most respondents in Navi Mumbai are concerned about privacy with the Digital Rupee, with 62.9% strongly agreeing, 35.1% agreeing, 1% neutral, and 1% strongly disagreeing, showing privacy remains a key issue for adoption.

Would you be willing to use the Digital Rupee for daily transactions?

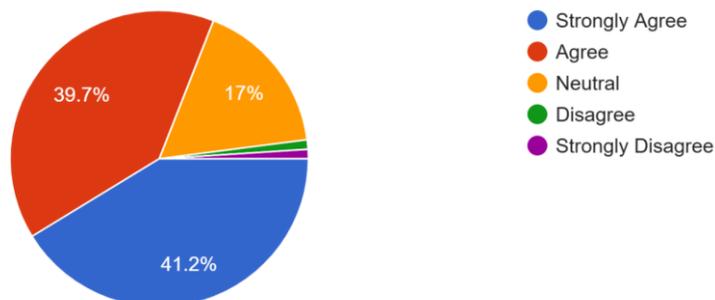
194 responses



The survey shows strong willingness among respondents to use the Digital Rupee for daily transactions: 89.7% said “Yes,” 7.2% responded “Maybe,” and 3.1% said “No.” This indicates a generally positive adoption intention, though a small portion remains hesitant.

The Digital Rupee will be more convenient than cash.

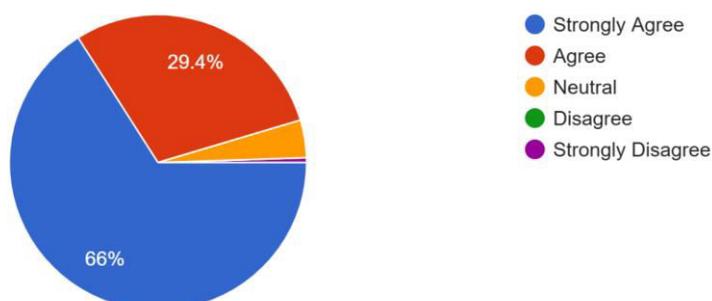
194 responses



The survey responses indicate that a majority of respondents perceive the Digital Rupee as more convenient than cash. 41.2% strongly agree, 39.7% agree, 17% are neutral, 1.1% disagree, and 1% strongly disagree. This suggests that consumers in Navi Mumbai generally see CBDC as a convenient alternative to physical cash, though a small portion remains uncertain or skeptical.

The Digital Rupee will help reduce cash handling and transaction costs.

194 responses



JVM's Mehta Degree College, Sector 19, Airoli

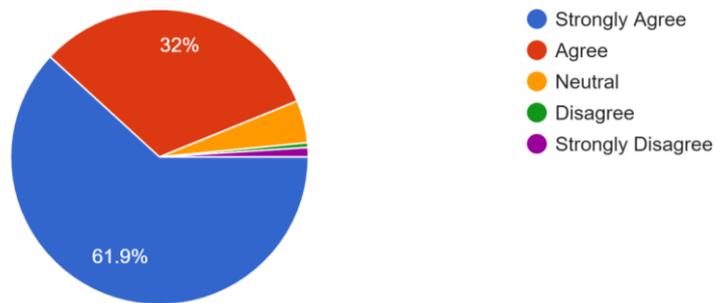
NAAC Re-accredited "A+" Grade

IQAC in association with Western Regional Centre, ICSSR Organized one day National Conference on "Integrating Multidisciplinary Approaches to Build a Resilient and Sustainable Future", held on 10th January 2026

The survey results show that a majority of respondents believe the Digital Rupee will help reduce cash handling and transaction costs. 66% strongly agree, 29.4% agree, 4% are neutral, and only 0.6% strongly disagree. This indicates that consumers in Navi Mumbai generally recognize the potential of CBDC to make transactions more efficient and cost-effective.

The Digital Rupee will improve transparency and reduce financial fraud.

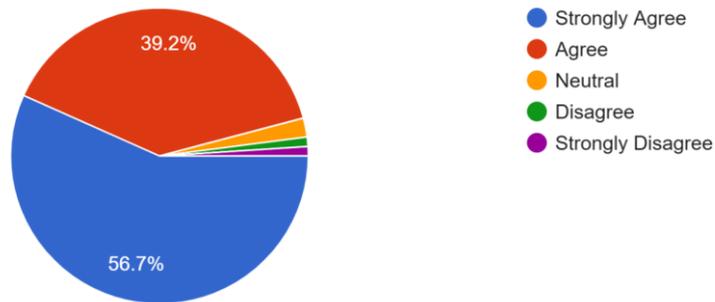
194 responses



The survey shows that most respondents believe the Digital Rupee will improve transparency and reduce financial fraud. 61.9% strongly agree, 32% agree, 5% are neutral, and only 1.1% disagree or strongly disagree. This indicates that consumers in Navi Mumbai perceive CBDC as a tool to enhance secure and transparent financial transactions.

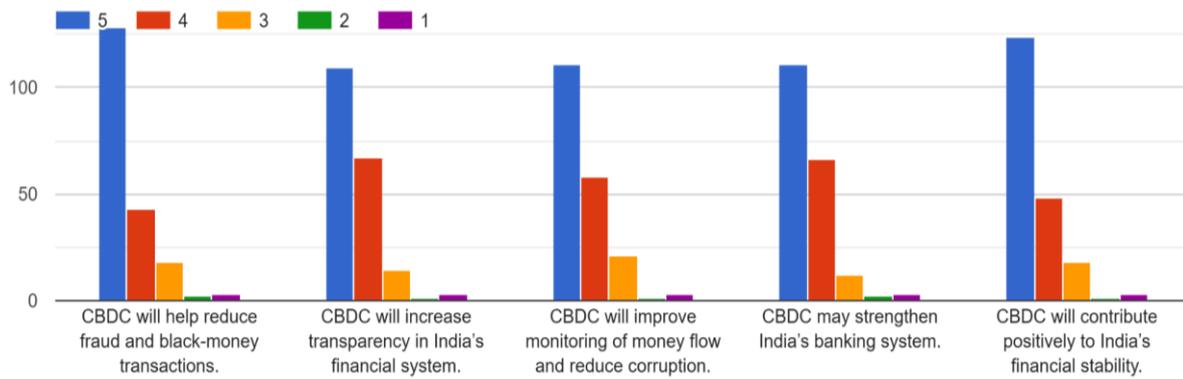
Overall, the Digital Rupee will strengthen India's financial stability.

194 responses



The survey indicates that a majority of respondents believe the Digital Rupee will strengthen India's financial stability. 56.7% strongly agree, 39.2% agree, 2.6% are neutral, and only 1.5% disagree or strongly disagree. This reflects a strong public perception that CBDC can contribute to a more stable and resilient financial system.

Perceived Impact on Financial Stability (1 = Strongly Disagree, 5 = Strongly Agree)



1. CBDC will help reduce fraud and black-money transactions

About 69% of respondents strongly agree and 24% agree that the Digital Rupee can reduce fraud and black-money transactions. Around 5% are neutral, while only 2% disagree or strongly disagree. This shows strong confidence in CBDC’s role in curbing illegal financial activities.

2. CBDC will increase transparency in India’s financial system

Nearly 71% strongly agree and 22% agree that CBDC will enhance transparency. About 5% remain neutral and roughly 2% disagree, indicating an overall positive perception of improved financial transparency.

3. CBDC will improve monitoring of money flow and reduce corruption

Around 68% of respondents strongly agree and 25% agree with this statement. About 5% are neutral, while only 2% express disagreement, reflecting belief in better monitoring and reduced corruption through CBDC.

4. CBDC may strengthen India’s banking system

Approximately 66% strongly agree and 27% agree that CBDC can strengthen the banking system. Nearly 5% are neutral and 2% disagree, suggesting broad support with minor hesitation.

5. CBDC will contribute positively to India’s financial stability

About 70% strongly agree and 23% agree that the Digital Rupee will positively impact financial stability. Around 4% are neutral and 3% disagree, indicating strong overall confidence in CBDC’s contribution to India’s financial stability.

HYPOTHESIS RESULT

The analysis of primary data collected from 194 respondents was conducted using descriptive statistics and inferential analysis, with responses measured on a 5-point Likert scale. To test the hypotheses, a One-Sample t-test was applied by comparing the calculated mean scores with the neutral test value of 3. The results showed that the mean score for consumer awareness of the Digital Rupee was significantly higher than the test value, with the t-value significant at the 5% level ($p < 0.05$), leading to the rejection of the null hypothesis and confirming significant consumer awareness. Similarly, the mean score for the impact of the Digital Rupee on financial stability also exceeded the neutral value, and the t-test results were statistically significant at the 5% level, resulting in the rejection of the null hypothesis and confirming a significant positive impact on financial stability. Overall, the findings indicate strong agreement among respondents, and the One-Sample t-test effectively validates the stated research hypotheses.

FINDINGS

The study, based on responses from **194 respondents**, reveals a high level of consumer awareness regarding the Digital Rupee and a largely positive perception of its role in the financial system. The application of **One-Sample t-test analysis** indicates statistically significant results, leading to the rejection of the null hypotheses and acceptance of the alternative hypotheses. The findings show that respondents strongly believe the Digital

JVM's Mehta Degree College, Sector 19, Airoli

NAAC Re-accredited "A+" Grade

IQAC in association with Western Regional Centre, ICSSR Organized one day National Conference on "Integrating Multidisciplinary Approaches to Build a Resilient and Sustainable Future", held on 10th January 2026

Rupee can improve transparency, reduce financial fraud, and strengthen India's financial stability, reflecting growing acceptance and confidence in the Digital Rupee as a reliable digital payment instrument.

CONCLUSION

A study on Consumer Perception and Implications of the Central Bank Digital Currency (Digital Rupee) with reference to Navi Mumbai concludes that consumers exhibit a high level of awareness, trust, and positive perception toward the Digital Rupee.

Based on primary data collected from 194 respondents, the findings reveal strong confidence in the RBI-backed Digital Rupee in terms of safety, transparency, reduction of fraud and black money, convenience, and contribution to financial stability. The majority of respondents expressed willingness to adopt the Digital Rupee for daily transactions, while also acknowledging concerns related to privacy. The application of descriptive analysis and One-Sample t-test confirms that consumer awareness is statistically significant and that the Digital Rupee is perceived to have a positive and meaningful impact on India's financial stability. Overall, the study highlights growing acceptance of CBDC in a digitally progressive urban region like Navi Mumbai, indicating a favorable environment for wider adoption in the future.

SUGGESTIONS

RBI and banks should conduct simple awareness programs to clearly explain the use and benefits of the Digital Rupee. Basic guidance on privacy and security features should be provided to build further consumer confidence.

BIBLIOGRAPHY / REFERENCES

1. Reserve Bank of India. (2022). *Concept note on central bank digital currency*. FinTech Department, Reserve Bank of India.
2. Reserve Bank of India. (2021). *Currency and finance report: Inflation, money and credit*. Reserve Bank of India.
3. <https://www.ijfmr.com/papers/2024/3/20761.pdf>
4. <https://journals.sagepub.com/doi/10.1177/09711023251370836>
5. [file:///C:/Users/admin/Downloads/06+Shita+European+Economic+letter+\(1\).pdf](file:///C:/Users/admin/Downloads/06+Shita+European+Economic+letter+(1).pdf)
6. https://vsit.edu.in/images/about/research/vol3_issue1/paper3.pdf
7. <https://www.rbi.org.in/commonman/English/scripts/FAQs.aspx?Id=3686>
8. https://en.wikipedia.org/wiki/Digital_rupee
9. Reuters. (2022, October 31). *India central bank to start a digital rupee pilot on Nov 1*. Reuters.
10. Anand, N. (2022, December 7). *India central bank says digital currency transactions to stay largely anonymous*. Reuters.
11. Ministry of Finance, Government of India. (2021). *Report of the committee to propose specific actions to be taken in relation to virtual currencies*. Government of India.
12. Ray, A. (2022, December 6). *RBI retail digital rupee pilot starts: Who can use e-Rupee?* The Economic Times.
13. Saha, M. (2022, December 6). *Transactions in CBDC pilots gather pace, all minor glitches fixed swiftly*. Business Standard.
14. The Indian Express. (2022, November 29). *Digital rupee pilot project launching on Dec 1: What is it and how will it work?*
15. Moneycontrol. (2022, October 10). *The e₹ is on the way as RBI gears up for a pilot launch of its own digital currency*.
16. Kaul, A. (2021, July 24). *RBI to launch CBDCs: What does it mean for the future of cryptocurrencies?* Mint.

JVM's Mehta Degree College, Sector 19, Airoli

NAAC Re-accredited "A+" Grade

IQAC in association with Western Regional Centre, ICSSR Organized one day National Conference on "Integrating Multidisciplinary Approaches to Build a Resilient and Sustainable Future", held on 10th January 2026

17. Badkar, S., & Singh, R. (2022, December 22). *India should prioritise a CBDC that expedites cross-border payments: IMF*. CNBCTV18.
18. Kaushal, T. J. (2022, November 1). *RBI's digital rupee pilot launch today: Here are 10 things to know*. Business Today.
19. Kotak, T. M. (2023). *Digital rupee and its impact on the Indian economy*. *International Journal for Multidisciplinary Research*, Conference Proceedings.