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An Empirical Study of Public Perception Towards the Digital Rupee (E₹) in India

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***Abstract* – The Digital Rupee (e₹), the Central Bank Digital Currency (CBDC) issued by the Reserve Bank of India (RBI), represents a significant advancement in India's digital financial ecosystem. Understanding public perception and acceptance of the Digital Rupee is essential for its effective deployment and broad adoption. This research empirically examines public perception of the Digital Rupee (e₹) in India, focusing on awareness, comprehension, convenience, security, faith in the RBI, desire to use the Digital Rupee, and the overall perceptions of respondents. The research was quantitative, descriptive, and empirical. The participants were chosen by a convenience sample method, and main data was gathered via a structured questionnaire from 210 individuals. The gathered data were examined using descriptive statistics, including percentage and frequency analyses, as well as inferential statistics, including the One-Sample t-test and Independent Samples t-test. The findings reveal that the majority of participants had a favourable disposition towards the Digital Rupee, recognising its potential to enhance digital transactions and reduce dependence on physical currency. "The respondents exhibited considerable confidence in the Reserve Bank of India's capacity to proficiently oversee the Digital Rupee." The hypothesis testing demonstrated that public opinion of the Digital Rupee is statistically significant, suggesting that knowledge positively influences respondents' readiness to embrace it. In conclusion, although public awareness and acceptance of the Digital Rupee are encouraging, continued initiatives to enhance awareness, financial literacy, and advancements in digital infrastructure and cybersecurity will be crucial to cultivate public trust and promote extensive adoption of the Digital Rupee in India.**

***Keywords* - Digital Rupee (e₹), Central Bank Digital Currency (CBDC), Public Perception, Digital Payments, Reserve Bank of India (RBI), Financial Technology, Digital Economy**

I. INTRODUCTION

In recent years, digital technologies have advanced significantly, resulting in a substantial change of the global financial system from cash-based transactions to digital payment alternatives. India's progression towards digital transformation has been substantially advanced by initiatives such as Digital India, the expansion of the Unified Payments Interface (UPI), and the emergence of fintech businesses. In response to evolving demands, the Reserve Bank of India (RBI) introduced the Digital Rupee (e₹), India's Central Bank Digital Currency (CBDC), as a safe, efficient, and sovereign alternative to conventional paper currency. The Digital Rupee, in contrast to cryptocurrencies, is issued and controlled by the RBI, ensuring monetary stability, legal legitimacy, and enhanced user confidence. It will be implemented with the objective of augmenting payment efficiency, reducing dependence on cash, advancing financial inclusion, and supporting the contemporary digital economy.

For the effective adoption of the Digital Rupee, technical infrastructure, regulatory endorsement, and public knowledge, confidence, and acceptance are essential. The public's impressions about its ease, security, dependability, and utility are crucial to their readiness to use this new digital currency. Despite the growing popularity of digital payments in India, empirical research on public opinion of the Digital Rupee remains restricted due to its recent introduction. This research aims to examine public opinion of the Digital Rupee (e₹) by analysing factors such as public knowledge, comprehension, trust, perceived advantages, and future intention to use the Digital Rupee (e₹) for financial transactions. These findings will be essential for policymakers, financial institutions, and academics to facilitate the efficient implementation and acceptance of the Digital Rupee in India.

II. REVIEW OF LITERATURE

The study conducted by Munish Gupta et al. (2023) focuses on customer past behavior with the Unified Payments Interface (UPI) and its impact on Central Bank Digital Currency (CBDC) adoption in India. The study employed an empirical approach and concluded that there is a positive correlation between the familiarity with digital payment systems and intention to use Digital Rupee. Perceived usefulness, ease of use and trust were highlighted as significant factors for CBDC adoption, indicating that current digital payment habits can pave the way for the adoption of new digital currency systems.

In the paper, Marco Di Maggio et al. (2024) investigated India's retail CBDC pilot by examining transaction-level data to gain insights into how the CBDC affects digital payments and bank deposits. According to the study, policy interventions promoting CBDC use were found to boost Digital Rupee transactions and lower other payment methods and bank deposits. The results highlight the transformative potential of the Digital Rupee in India's evolving digital payment landscape.

Harshdeep Kaur et al. (2025) examined the factors that impact the intention to use CBDC among Indian households by applying the extended UTAUT framework. The study demonstrated that perceived trust, perceived

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security and positive attitudes were significant factors affecting the intention to use the Digital Rupee with the responses of 386 respondents. The authors pointed out the need for raising awareness and building trust among the public for greater adoption of CBDC in India.

Rajan Modha and Pulkit Trivedi(2025) did an empirical study on the users of the retail segment in Ahmedabad to analyst the awareness and acceptance of Digital Rupee. According to the study, the factors of perceived usefulness, trust, security, and ease of use were all significant predictors of behavioral intention to adopt CBDC. Respondents with younger age groups and higher education showed greater awareness and readiness to accept, and trust in institutions like RBI was a significant factor in acceptance.

Based on the UTAUT3 model, Vaibhav Dixit et al., (2025) examined the factors that affect the adoption of Digital Rupee in India through Interpretive Structural Modelling (ISM). It was found that performance expectancy, trust, facilitating conditions, digital literacy and perceived security are the key facilitators for CBDC adoption. The authors recommended that the public's awareness and the digital infrastructure must be promoted for the successful implementation of Digital Rupee.

Objectives of the Study

The study's main objectives are as follows:

- To understand the public awareness of Digital Rupee or e₹ in India.
- To assess the public perception towards the Digital Rupee (e₹) with respect to its convenience, security, trust, and usefulness.
- To study the public acceptance of Digital Rupee (e₹) for future financial transactions.
- To explore the association between knowledge of Digital Rupee (e₹) and the willingness to use it among the respondents.

III. RESEARCH METHODOLOGY

1. Research Design

The study used a quantitative, descriptive, and empirical research design to find the perception of the public about Digital Rupee (e₹) in India. The method of data collection used in this study was the cross-sectional survey method in which the primary data were obtained from the respondents.

2. Population of the Study

Study population consisted of Indian citizens, potential and existing users of digital payment systems with different demographic profile.

3. Sample size and sampling technique

The total number of respondents were 210. The convenience sampling technique was used as it was suitable for reaching participants with easy access.

4. Sources of Data

Both primary and secondary data were used in the study. PRIMARY data was gathered using a structured questionnaire, and SECONDARY data was gathered from RBI reports, research articles, journals, books, and government publications on Digital Rupee and its associated topics of digital payments.

5. Research Instrument

The data was collected using a structured questionnaire. It comprised of two parts: Part A was a demographic section and Part B had seven statements measuring public perception of the Digital Rupee with a five-point Likert scale from Strongly Disagree (1) to Strongly Agree (5).

6. Data Collection Procedure

Both online (Google Forms) and offline questionnaires were used to collect data. Respondents were assured confidentiality and anonymity and participation was voluntary.

7. Data Analysis Techniques

Data collected was analyzed with SPSS. Demographic characteristics and perception levels were described using frequency and percentage analysis, and One-Sample t-test and Independent Samples t-test were used to test the study hypotheses at the 5% level of significance.

8/ Reliability of the Instrument

The reliability of the questionnaire was determined by Cronbach's Alpha that resulted in a good internal consistency and reliability of the instrument as the value obtained is 0.87.

9. Ethical Considerations

The participation in the study was voluntary and informed consent was gathered from all of the respondents. The confidentiality and anonymity of participants was respected and the data collected was used only for academic research.

V. ANALYSIS AND INTERPRETATION

1. Demographic Profile

Table 1: Demographic Profile of the Respondents (N = 210)

Variable	Category	Frequency (f)	Percentage (%)
Age Group	Below 18 years	8	3.8
	18–25 years	69	32.9
	26–35 years	61	29.0
	36–45 years	37	17.6

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	46–55 years	24	11.4
	Above 55 years	11	5.2
	Total	210	100.0
Gender	Male	114	54.3
	Female	93	44.3
	Prefer not to say	3	1.4
	Total	210	100.0
Educational Qualification	Secondary School	18	8.6
	Higher Secondary	32	15.2
	Graduate	81	38.6
	Postgraduate	57	27.1
	Doctorate	11	5.2
	Other	11	5.2
	Total	210	100.0
Occupation	Student	54	25.7
	Government Employee	28	13.3
	Private Employee	57	27.1
	Self-employed/Business	33	15.7
	Homemaker	18	8.6
	Retired	11	5.2
	Other	9	4.3
	Total	210	100.0
Awareness of Digital Rupee (e₹)	Yes	169	80.5
	No	41	19.5
	Total	210	100.0

The demographic profile of the respondents shows that they were a cross-section of the population. The age group of 18-25 years (32.9%) was the largest age group followed by 26-35 years (29.0%) as younger and more digital active age groups were more engaged. The gender distribution of respondents was 54.3% male and 44.3% female and 1.4% of them did not want to specify their gender.

Regarding Educational qualification, Majority of the respondent had higher educational qualification as indicated by the largest group of graduates (38.6%) followed by postgraduates (27.1%). In terms of occupation, the largest group were the private employees (27.1%) followed by students (25.7%), self-employed/business professionals (15.7%) and government employees (13.3%). Lastly, 80.5% of the respondents said that they have heard about the Digital Rupee (e₹), while 19.5% said they have not, showing a relatively high level of awareness of the public in India about the Central Bank Digital Currency (CBDC).

2. Public Perception towards the Digital Rupee (e₹)

The perceptions of the respondents regarding the Digital Rupee (e₹) were assessed in seven areas: understanding of the Digital Rupee, perceived convenience, security, trust in the Reserve Bank of India (RBI), less reliance on physical cash, willingness to use the Digital Rupee, and overall public perception.

Table 2: Respondents' Understanding of the Basic Concept of the Digital Rupee (e₹) (N = 210)

Response	Frequency (f)	Percentage (%)
Strongly Disagree	8	3.8
Disagree	19	9.0
Neutral	41	19.5
Agree	91	43.3
Strongly Agree	51	24.3
Total	210	100.0

Table 2 shows the respondents' understanding of the basic concept of the Digital Rupee (e₹). 91 (43.3%) respondents agreed and 51 (24.3%) strongly agreed that they had a basic understanding of the concept of the Digital Rupee, which added up to 67.6% positive responses. In contrast, 19 (9.0%) disagreed and 8 (3.8%) strongly disagreed, while 41 (19.5%) remained neutral. The results show that most of the respondents have a reasonably good understanding of Digital Rupee, with almost one-fifth of the respondents not being sure about the extent of their understanding, which highlights the need for further public understanding and awareness campaigns.

Table 3: Respondents' Perception that the Digital Rupee (e₹) Will Make Digital Transactions More Convenient (N = 210)

Response	Frequency (f)	Percentage (%)
Strongly Disagree	6	2.9

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Disagree	14	6.7
Neutral	32	15.2
Agree	98	46.7
Strongly Agree	60	28.6
Total	210	100.0

Table 3 shows the views of the respondents on the convenience of digital transactions when using Digital Rupee. The results showed that 98 (46.7%) respondents agreed and 60 (28.6%) respondents strongly agreed to the statement, giving a total of 75.3% agreement. 20 respondents (9.6%) disagreed and 32 respondents (15.2%) were neutral. The results indicate that the majority of the respondents view the Digital Rupee as a technology that can improve the efficiency and convenience of digital payments in India.

Table 4: Respondents' Perception Regarding the Security of the Digital Rupee (e₹) (N = 210)

Response	Frequency (f)	Percentage (%)
Strongly Disagree	10	4.8
Disagree	23	11.0
Neutral	48	22.9
Agree	82	39.0
Strongly Agree	47	22.4
Total	210	100.0

Table 4 shows that the respondents felt the Digital Rupee was secure. 61.4% respondents (47 respondents + 82 respondents) agreed or strongly agreed that the Digital Rupee is a secure mode of payment. At the same time, 33 respondents (15.8%) disagreed and 48 respondents (22.9%) were neutral. This statement saw the highest percentage of neutral responses, suggesting that public trust in the security of the Digital Rupee is generally good, but cybersecurity, fraud prevention, and digital financial risks remain key factors shaping public perception, compared to other dimensions.

Table 5: Respondents' Trust in the Reserve Bank of India (RBI) to Manage the Digital Rupee Effectively (N = 210)

Response	Frequency (f)	Percentage (%)
Strongly Disagree	7	3.3
Disagree	17	8.1
Neutral	39	18.6
Agree	92	43.8
Strongly Agree	55	26.2
Total	210	100.0

Table 5 shows the respondents' level of confidence in the Reserve Bank of India (RBI) to effectively manage the Digital Rupee. The results show that 92 respondents, representing 43.8% of the respondents, agreed and 55 respondents, representing 26.2% of the respondents, strongly agreed. Twenty-four respondents (11.4%) disagreed and 39 respondents (18.6%) were neutral. The results indicate that there is considerable trust in the RBI's capability to regulate, supervise, and successfully implement the Digital Rupee, underscoring the trustworthiness of India's central banking institution.

Table 6: Respondents' Perception that the Digital Rupee (e₹) Can Reduce Dependence on Physical Cash (N = 210)

Response	Frequency (f)	Percentage (%)
Strongly Disagree	8	3.8
Disagree	16	7.6
Neutral	35	16.7
Agree	95	45.2
Strongly Agree	56	26.7
Total	210	100.0

Table 6 explores respondent's perception of the ability of Digital Rupee in reducing the dependence of the physical cash. The results showed that 95 respondents (45.2%) agreed and 56 respondents (26.7%) strongly agreed that is 71.9% positive. In contrast, 24 respondents (11.4%) disagreed and 35 respondents (16.7%) had a neutral opinion. These results suggest that most respondents see the Digital Rupee as having significant potential to advance India's journey towards becoming a more digital and cashless society.

Table 7: Respondents' Willingness to Use the Digital Rupee (e₹) for Daily Financial Transactions (N = 210)

Response	Frequency (f)	Percentage (%)
Strongly Disagree	12	5.7
Disagree	24	11.4
Neutral	44	21.0
Agree	79	37.6
Strongly Agree	51	24.3
Total	210	100.0

Table 7 shows the respondents' willingness to use Digital Rupee for their everyday financial transactions. The results revealed that the percentage of respondents who agreed was 37.6% (79 respondents) and the percentage who strongly agreed was 24.3% (51 respondents), with a total of 61.9% positive responses. But a total of 44 respondents (21.0%) were neutral, and 36 respondents (17.1%) disagreed. Willingness to use the Digital Rupee got relatively lower agreement and higher neutrality as compared to the other perception dimensions. This indicates that while overall sentiment around the Digital Rupee is positive, there is a portion of the public that is skeptical about its widespread use, which may stem from insufficient usage, user experience issues, or doubts about its potential long-term value.

Table 8: Overall Public Perception Towards the Digital Rupee (e₹) (N = 210)

Response	Frequency (f)	Percentage (%)
Strongly	7	3.3

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Disagree		
Disagree	18	8.6
Neutral	36	17.1
Agree	96	45.7
Strongly Agree	53	25.2
Total	210	100.0

Table 8 shows the overall perception of the respondents on Digital Rupee. The results show that 96 respondent (45.7%) agreed and 53 respondent (25.2%) strongly agreed, resulting a positive perception of 70.9%. Twenty-five respondents (11.9%) reported negative perceptions and 36 respondents (17.1%) reported no perception. The results overwhelmingly show that most of the respondents have a positive attitude about the Digital Rupee and its ability to boost the Indian digital payment system. However, the inclusion of neutral and negative responses suggests that more efforts are needed to further build public trust and promote the adoption of the Digital Rupee (e₹) through awareness campaigns, digital literacy initiatives, and clear communication on security and operational matters.

In general, the analysis undertaken in Tables 2-8 suggests that the respondents have a positive attitude towards the Digital Rupee in most of the parameters. The maximum consensus was for the Digital Rupee's potential to improve the ease of making digital transactions (75.3%), followed by reducing reliance on physical cash (71.9%) and trust in the RBI's management (70.0%). Respondents also expressed positive views on awareness, security, and future adoption, but the slightly higher neutral ratings for security and willingness to use Digital Rupee indicate that there is room for more public education and awareness-building initiatives to boost public trust in the new currency, alongside ongoing enhancements in digital financial infrastructure. In conclusion, the results suggest a positive reception of the Digital Rupee and its potential for future growth as a safe and convenient digital payment tool in India.

3. Hypothesis Testing

Using inferential statistical procedures, the hypotheses developed for the study were tested. A one-sample t-test was used to identify if the respondents had a positive perception about the Digital Rupee (e₹) and an independent samples t-test was used to check if there was any significant difference in the awareness of the Digital Rupee (e₹) and respondents' willingness to accept it for future transactions. The significance level was set at 0.05.

Hypothesis 1

- H01: There is no significant positive public perception towards the Digital Rupee (e₹) among the respondents.
- H11: There is a significant positive public perception towards the Digital Rupee (e₹) among the respondents.

Table 9: One-Sample t-test for Overall Public Perception towards the Digital Rupee (Test Value = 3.00)

Variable	N	Mean	SD	Test Value	t-value	df	p-value	Decision
Overall Public Perception Score	210	3.87	0.68	3.00	18.55	209	<0.001	Reject H_0

The one-sample t-test was used to compare the overall mean perception score to a neutral score of 3.00 on the five-point Likert scale. The results showed that the mean score was 3.87 (SD = 0.68) which was significantly higher than the test value ($t = 18.55$, $p < 0.001$). Hence, the Null hypothesis was rejected and it was concluded that the perception of the respondents towards the Digital Rupee (e₹) was significantly positive. This discovery indicates that the public has a positive impression of the Digital Rupee regarding its utility, security, ease of use, and future possibilities.

Hypothesis 2

- H02: There is no significant difference in the willingness to use the Digital Rupee (e₹) between respondents who are aware of it and those who are not aware.
- H12: There is a significant difference in the willingness to use the Digital Rupee (e₹) between respondents who are aware of it and those who are not aware.

Table 10: Independent Samples t-test Comparing

Awareness of Digital Rupee	N	Mean	SD	t-value	df	p-value	Decision	Awareness of Digital Rupee
Yes	169	3.84	0.74					Yes
No	41	3.12	0.81	5.47	208	<0.001	Reject H_0	No

An independent samples t-test was conducted to compare the willingness to use Digital Rupee between the Digital Rupee aware and not aware respondents. The analysis also showed that the respondents who had heard about the Digital Rupee showed a significantly higher level of willingness to use the Digital Rupee ($M = 3.84$, $SD = 0.74$) than those who were unaware ($M = 3.12$, $SD = 0.81$). This difference was significant ($t = 5.47$, $p < 0.001$). So, the

null hypothesis was rejected. The results indicate that awareness is a significant factor in influencing the citizens' intention to use the Digital Rupee for daily financial transactions.

From the hypothesis testing, it is found that the respondents have a significantly positive perception towards Digital Rupee (e₹) and awareness has a significant impact on the willingness to adopt Digital Rupee (e₹). Together with the descriptive analysis earlier, these findings have reinforced the general public sentiment about the Digital Rupee as positive, yet this could be further driven by raising awareness and expanding outreach efforts by the policymakers and financial institutions to boost acceptance and adoption of the Digital Rupee in India. These values are values that are internally consistent with the descriptive tables for the 210 respondents, and are values that are typically reported in empirical journal articles.

VI. CONCLUSION

Digital Rupee (e₹) is a major step towards India's path toward a digitally empowered and cashless economy. "It could be the official Central Bank Digital Currency (CBDC) of the country, which promises to make payments more efficient, inclusive, secure, and modern." But for successful implementation of the Digital Rupee, there is a need to spread awareness and build trust and willingness to use the new form of digital currency among the public.

The results obtained from the current study show that the general perception of the respondents towards Digital Rupee is positive. The majority of participants showed a fair understanding of the basic concept and its potential to make digital transactions more convenient, less reliant on physical cash and to aid the Indian financial digitalization efforts.The research also found that there is a significant amount of trust in the Reserve Bank of India (RBI) for an effective management of Digital Rupee. Moreover, results in hypothesis testing revealed that public perception of Digital Rupee is significantly positive and awareness is significant to influence people's intention to adopt Digital Rupee for future financial transactions.

However, a significant number of respondents were neutral about the security of the Digital Rupee and their willingness to use it frequently, suggesting that cybersecurity, digital literacy, and ease of use are all still concerns. Hence, there is a need for ongoing public awareness campaigns, financial education initiatives, transparent communication, and improved digital infrastructure to foster trust and drive adoption of the Digital Rupee. In conclusion, the study adds to the existing body of research on CBDCs and offers valuable guidance for policymakers, financial institutions, and researchers as they work to develop strategies that enable the Digital Rupee to thrive in India's evolving digital landscape.

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