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RESEARCH ARTICLE

Identifying the Factors Affecting Behavioural Intention Towards Adoption and Usage of Central Bank Digital Currencies

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ABSTRACT:

Central Bank Digital Currencies (CBDC), a FinTech initiative by the Reserve Bank of India has the potential to enhance the financial inclusion, increase the momentum and efficiency of the financial transactions by reducing the costs associated with the conventional payment mechanism. CBDC's are backed up by RBI in similar ways to cash thereby ensuring consumer protection and building up trust. RBI's initiation of digital rupee is a trial to understand the level of adoption among public. The paper intends to measure the factors that lead to adoption and usage of CBDC's among public. The researcher has collected data from 390 individuals from Gujarat using a structured questionnaire to measure their level of behavioural intention towards its adoption and usage. Perceived ease of use, innovativeness, perceived value, and perceived convenience and financial knowledge are the factors identified. A positive relationship exists between these factors and the behavioural intention. Since, the public is already experienced with real time payments, CBDCs have the potential to make payments faster, cheaper, safe, and frictionless.

Keywords: CBDC, Behavioural Intention, Perceived usefulness, Innovativeness, Perceived Convenience.

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Introduction

Central Bank Digital Currencies (CBDCs) play a transformative role in the fiscal and monetary policy landscape. Their introduction is likely to bring several implications and considerations for central banks and the broader economic environment. CBDCs can potentially reshape the traditional banking system by altering the relationship between central banks, commercial banks, and the public. As digital currencies emerge, they are seen as a viable competitor to central bank fiat currencies, which may pressure central banks to adapt their monetary policies (Raskin & Yermack, 2016). The deployment of CBDCs promises to provide rapid settlement capabilities, low transaction fees, and improved accessibility. However, to mitigate risks, central banks need to carefully design CBDCs to prevent undesired consequences such as bank disintermediation, changes in money velocity, and impacts on bank deposit volatility (Lukonga, 2023).

The introduction of a CBDC could also widen the scope of monetary policy implementation, offering a new transmission channel for monetary actions. This particular channel depends on several economic factors like investment sensitivity and interest rates (Temperini et al., 2023). While there is potential for lasting positive impacts on GDP, this could also reduce the demand for traditional bank deposits, posing challenges for financial stability. Consequently, central banks may need to adjust liquidity reserve requirements and monitor yields on bank loans to avoid increasing risks of bank failures (Jun & Yeo, 2021).

Furthermore, the adoption of CBDCs is expected to enhance financial inclusion, particularly in developing countries, by making financial services more accessible to underserved communities. For instance, Kazakhstan's "Digital Tenge" initiative aims to strengthen financial inclusion and stabilize the financial system by allowing more direct control over currency supply and monetary policy (Nawaz et al., 2024).

Moreover, central banks are exploring the potential implications of CBDCs as a reaction to the rise of private digital currencies. These central bank-issued currencies aim to maintain the integrity of payment systems, drive reform, and support monetary policies within the context of digital currency alternatives (Cesaratto & Febrero, 2023). The strategic design and deployment of CBDCs, taking into consideration technological, economic, and regulatory factors, are crucial to unlocking their true potential (Kumar et al., 2024).
The introduction of India's Central Bank Digital Currency (CBDC), the digital rupee, by the Reserve Bank of India (RBI) holds significant potential benefits and implications for the country's economy and financial sector.

1. **Financial Inclusion**: One of the primary benefits of introducing the digital rupee is enhancing financial inclusion across the nation. India's financial system is poised to play a significant role in the execution of CBDC, designed to integrate seamlessly with India's existing digital payment infrastructure. This integration can improve accessibility to financial services, especially for underserved and rural populations, thereby promoting economic participation among a broader section of society (Banerjee & Sinha, 2023).
2. **Influence of Prior Digital Payment Experience**: The widespread experience with digital payment systems like the Unified Payments Interface (UPI) impacts the adoption and usage behavior of CBDC. Users familiar with UPI show varied behavioral intentions towards using CBDCs, influenced by factors such as hedonic motivation and social influence. This suggests that the existing digital payment ecosystem will significantly shape the digital rupee's acceptance and effective use (Gupta et al., 2023).
3. **Financial Stability and Banking Sector Implications**: Implementing CBDC can impact financial stability positively. Findings indicate that CBDC can improve financial stability by reducing leverage and asset risks. This has profound implications, especially for larger banks and suggests that retail CBDC could promote stability more effectively than wholesale CBDCs. The digital rupee could enhance asset quality and lending capacities, improving overall financial health in India (Luu et al., 2023).

4. **Policy and Economic Strategy Alignment**: The digital rupee is seen as a key tool in aligning India with the global digital economy. This transition is critical to maintaining India's position in the fast-evolving technological landscape. India's shift towards a digital economy through CBDC aims to strengthen socio-economic structures by utilizing innovations like blockchain and enhancing the efficiency of payment systems (August Keshav, 2024).

5. **Potential Risks and Design Considerations**: Despite the advantages, certain risks like the possible disintermediation of banks and adverse effects on financial stability need careful consideration. The design of the CBDC, including features like caps on holdings and remuneration policies, is crucial to mitigate these risks and achieve a balance between innovation and financial stability (Infante et al., 2024).

6. **Adoption Among Younger Generations**: For successful adoption, tailored strategies targeting younger generations, such as Gen Z, are necessary. These strategies should focus on factors like perceived trust, ease of use, and social influence, which are pivotal in shaping attitudes and intentions towards CBDC usage (Kaur et al., 2024).

Behavioural intention towards the adoption and usage of CBDCs is an evolving area of study. It comprises of understanding the individual's attitudes, beliefs, refraining factors and motivations regarding the usage of digital rupee, CBDC of the country. Several factors such as perceived benefits, perceived risks, perceived trust, perceived ease of use, social influence, financial literacy, regulatory environment, demographic factors may influence the adoption and usage of CBDCs. It is highly advisable to have a deeper understanding on the factors which plays a crucial role for central banks, researchers, policy makers, Government authorities in order to promote the adoption and usage of CBDCs in India.

Literature Review

Gupta et.al (2023) by adopting TAM model examined how perceived risks and benefits affect trust and willingness to adopt digital rupees in India. Financial risk, regulatory risk, security risk, privacy and anonymity, operational risk and inertia are the six perceived risk factors taken into consideration. The four perceived benefits considered are perceived usefulness, perceived ease of use, awareness, and innovativeness. It has been found that the willingness to adopt the digital rupee can be significantly predicted using all constructs except perceived usefulness. Moreover, it was also inferred that perceived ease of use, innovativeness, and inertia do not significantly impact trust to adopt the digital rupee.

The emergence of Central Bank Digital Currencies (CBDCs) has become a pivotal topic in contemporary financial discourse, particularly for developing economies such as India, where digital transformation is advancing rapidly. Several scholars have examined the opportunities, challenges, and implications of introducing a digital rupee, each offering valuable perspectives on how such an initiative could reshape the Indian financial landscape. Collectively, these studies underline the need for a balanced approach that combines innovation with regulatory prudence, ensuring that CBDCs serve as a catalyst for financial inclusion and efficiency rather than a source of systemic risk.

Haque and Shoaib (2023) present a comprehensive discussion on the challenges and prospects associated with digital currency in India, emphasizing the transformative potential of the Central Bank Digital Currency (CBDC). According to their findings, the launch of the digital rupee could profoundly affect the financial sector, particularly in areas related to payments, banking operations, and monetary policy transmission. However, the successful adoption of CBDCs hinges on the presence of adequate digital infrastructure and robust regulatory frameworks. The authors highlight that while India has made significant strides in financial digitization through platforms like Unified Payments Interface (UPI), Aadhaar, and other fintech innovations, the introduction of CBDCs demands an even higher level of technological sophistication and cybersecurity readiness. They stress that ensuring the safety, reliability, and usability of the digital rupee will be crucial for fostering public confidence. Moreover, Haque and Shoaib (2023) argue that digital literacy among users and institutional preparedness among banks and intermediaries must be strengthened to facilitate smooth adoption. Their study underscores that

CBDCs, if implemented effectively, can contribute to a more efficient and transparent financial system but caution that their success depends on careful policy design and phased implementation.

Complementing this perspective, Ozili (2023) delves into both the advantages and potential pitfalls of introducing CBDCs in the Indian context. His study identifies a growing interest among Indian citizens—particularly those already engaged in cryptocurrency investments—in exploring the CBDC as a safer and more regulated alternative. The study acknowledges that the rise of private cryptocurrencies like Bitcoin and Ethereum has created a foundation of digital asset awareness among the public, which could ease the transition toward a government-backed digital currency. Among the potential benefits highlighted by Ozili are the reduction in dependency on cash, decreased transaction costs, and lower settlement risks. By reducing reliance on physical currency, CBDCs could enhance the efficiency of payment systems, minimize the costs associated with printing and handling cash, and promote financial inclusion, especially in remote areas. Nevertheless, Ozili (2023) cautions that the risks associated with CBDCs must be meticulously analyzed and weighed against their benefits. Issues such as data privacy, cybersecurity, and potential disintermediation of banks could pose serious challenges. The author concludes that while CBDCs hold promise for improving financial stability and inclusion, policymakers must adopt a comprehensive risk assessment framework before full-scale implementation.

Singh et al. (2022) contribute to the discourse by focusing on the operational mechanisms required to introduce CBDCs without disrupting the existing monetary system. Their review outlines the need for a well-defined implementation strategy that preserves monetary sovereignty and financial stability. The authors argue that the introduction of a digital rupee must be aligned with the objectives of the Reserve Bank of India (RBI) and must complement, rather than replace, the traditional currency system. Singh et al. emphasize the importance of establishing a robust regulatory structure that delineates the role of financial intermediaries, prevents misuse of digital currency, and ensures compliance with anti-money laundering (AML) and counter-terrorist financing (CTF) regulations. They also stress the significance of interoperability between CBDCs and existing digital payment systems to facilitate seamless transactions. Their study concludes that an incremental, pilot-based approach would allow policymakers to test technological systems, assess user responses, and refine policies accordingly. Such a phased rollout could mitigate potential disruptions in the monetary system and help build public trust in the new form of currency.

Kumar (2021) approaches the subject from a more institutional and macroeconomic perspective, analyzing the implications of CBDCs on the Indian financial system. The study recognizes that the emergence of cryptocurrencies such as Bitcoin has challenged the conventional role of central banks, particularly in maintaining monetary control and public trust in the currency. Kumar notes that central banks worldwide, including the Reserve Bank of India, have been motivated to explore CBDCs as a countermeasure to the growing influence of decentralized digital currencies. According to his analysis, the central bank's role as the guardian of monetary stability and issuer of legal tender remains critical to maintaining public trust in the financial system. Kumar argues that the introduction of a CBDC could help the central bank reassert its influence by providing a secure and reliable digital alternative that combines the benefits of innovation with institutional legitimacy. Furthermore, the study explores potential implications for commercial banks, including changes in deposit structures, liquidity management, and the transmission of monetary policy. While acknowledging these challenges, Kumar maintains that CBDCs could ultimately strengthen the financial ecosystem by enhancing transparency, improving cross-border transactions, and promoting financial inclusion if properly regulated.

Expanding the discussion beyond the Indian context, Kaur (2020) examines global trends in digital currency adoption and analyzes their implications for India through a SWOT (Strengths, Weaknesses, Opportunities, and Threats) framework. Her study provides a comparative analysis of digital currency initiatives in selected countries, including China, Sweden, and the Bahamas, highlighting the diverse motivations and implementation strategies adopted by different central banks. Kaur identifies several strengths in India's position, such as a strong fintech

ecosystem, a large digitally active population, and government initiatives promoting cashless transactions. However, she also points out weaknesses, including infrastructural gaps, regulatory uncertainty, and low digital literacy in rural areas. Opportunities lie in using CBDCs to expand financial inclusion, enhance payment efficiency, and reduce corruption by improving transaction traceability. The major threats, however, include cybersecurity risks, privacy concerns, and potential resistance from traditional banking institutions. Her analysis suggests that India can learn valuable lessons from global experiences by adopting a cautious yet forward-looking approach that prioritizes technological resilience and public trust.

Together, these studies create a holistic picture of the complexities surrounding CBDC adoption in India. They collectively highlight that the success of a digital rupee will depend on striking a balance between innovation and regulation, ensuring that technological advancement does not compromise financial stability or public trust. While the prospects of enhanced efficiency, reduced transaction costs, and improved financial inclusion are promising, the risks related to data security, system reliability, and regulatory oversight cannot be overlooked. Future research and policymaking must therefore focus on developing an integrated framework that combines technological preparedness, institutional capacity building, and user-centric design principles. As India continues its journey towards a digital financial ecosystem, the insights offered by these scholars serve as vital guideposts for shaping an inclusive, secure, and sustainable CBDC framework that aligns with the nation's broader economic and social objectives.

Objectives of the study

The objectives formulated by the researcher are:

1. To identify the factors that lead to adoption and usage of CBDC among public of India.

2. To analyze the behavioural intention of public towards the adoption and usage of CBDC.

Hypotheses of the study

H_{01}: There is no significant difference between factors that lead to adoption and usage of CBDC among public.

H_{02}: There is no significant relationship between factors affecting adoption and usage of CBDC and its behavioural intention.

Research Methodology

The present study adopts both descriptive and analytical research designs. It is descriptive in nature as it aims to explain and portray the characteristics of the selected population, and analytical as it employs statistical tools to test the formulated hypotheses. The study relies on both primary and secondary data sources to ensure comprehensive coverage of the research objectives. Secondary data were collected from credible sources such as books, academic journals, periodicals, published reports, and the official website of the Reserve Bank of India (RBI), which provided background information and theoretical support. Primary data, on the other hand, were obtained from 390 respondents from various parts of Gujarat who are employed and possess an inclination towards making financial investments. The respondents were selected using a convenience sampling method, which allowed the researcher to gather relevant data efficiently from individuals accessible and willing to participate.

To collect the primary data, a structured questionnaire was designed, incorporating statements related to the adoption and usage of Central Bank Digital Currencies (CBDCs). A total of 425 questionnaires were distributed, out of which 390 valid responses were retained for analysis after excluding incomplete or inconsistent responses. The reliability of the questionnaire was assessed using Cronbach's Alpha, a measure of internal consistency, which yielded a value of 0.954. This high value confirms that the items used in the instrument were highly reliable and suitable for further analysis. The collected responses were systematically coded, tabulated, and analyzed using IBM SPSS Statistics 21, ensuring accuracy and consistency throughout the data analysis process.

For statistical analysis, the researcher employed Factor Analysis to identify, group, and name the underlying factors influencing the adoption and usage of CBDCs among the public. This technique helped in reducing a large number of variables into a smaller set of meaningful

components. Additionally, Correlation Analysis was carried out to examine the nature and strength of the relationship between behavioural intention and the key factors associated with CBDC adoption. Through these analyses, the study aimed to uncover the major determinants shaping individuals' behavioural intentions towards CBDC usage and to provide empirical evidence that could guide policymakers, financial institutions, and researchers in understanding public acceptance of digital currency systems in India.

Data Analysis and Discussion

The data collected from 390 respondents were analysed using IBM SPSS Statistics 21 to identify and group the factors influencing the adoption and usage of Central Bank Digital Currencies (CBDCs) among the public. The main objective of the analysis was to reduce a large number of observed variables into a smaller set of underlying factors that explain the correlations among them. To achieve this, factor analysis was employed as a data reduction and structure detection technique. This method helps in identifying patterns among the variables, allowing the researcher to determine which items cluster together and represent similar underlying dimensions affecting the adoption of CBDCs. By applying this statistical technique, the study could systematically uncover the key constructs influencing behavioural intentions towards CBDC adoption, such as perceived ease of use, innovativeness, perceived value, perceived convenience, and financial knowledge.

Table 6.1 Reliability Statistics

Cronbach's Alpha	No. of Items
0.954	32

(Source: Primary Data)

Before performing factor analysis, it was essential to ensure that the data was reliable and suitable for such an analysis. Reliability testing was conducted using Cronbach's Alpha, a widely accepted measure for assessing internal consistency of a scale (Cronbach, 1995). The results of the reliability test, presented in Table 6.1, show a Cronbach's Alpha value of 0.954 for the 32 items included in the questionnaire. This high alpha value indicates that the items have a strong internal correlation and that the scale used for measuring respondents' perceptions is highly reliable. Generally, a Cronbach's Alpha value above 0.70 is considered acceptable, values above 0.80 indicate good reliability, and values exceeding 0.90 represent excellent reliability. Therefore, the overall alpha value of 0.954 suggests that the instrument used in this study demonstrates exceptional reliability and that the items are consistent in measuring the intended constructs. This provides a strong foundation for proceeding with further statistical analyses, including factor extraction and correlation assessments.

Table 6.2 Factor Validity by KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling adequacy	0.936
Sampling Adequacy	
Bartlett's Test of approximate chi-square Sphericity	625.254
Degree of Freedom	701
Sig.	0.000

(Source: Primary Data)

In addition to reliability, the validity and suitability of data for factor analysis were tested using the Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy and Bartlett's Test of Sphericity. These tests assess whether the data structure is appropriate for identifying underlying factors. As shown in Table 6.2, the KMO value was found to be 0.936, which indicates that the data is of superior quality and highly suitable for factor analysis. According to Kaiser (1974) and Field (2000), KMO values between 0.50 and 0.70 are considered moderate, 0.70 to 0.80 are good, and values between 0.80 and 0.90 are superior, while values above 0.90 reflect excellent sampling adequacy. Therefore, the KMO value of 0.936 confirms that the dataset meets the statistical requirements for conducting a robust factor analysis.

The results of Bartlett's Test of Sphericity further validate the appropriateness of the data. The Chi-square value obtained was 9625.254 with 701 degrees of freedom, and the significance level was 0.000, which is well below the conventional threshold of 0.05. This indicates that correlations exist among the variables and that the correlation matrix is not an identity matrix, meaning that factor analysis is indeed appropriate for this

dataset. The statistically significant Bartlett's Test confirms that the variables share sufficient common variance to justify the application of factor analysis. Had the test been non-significant, it would have implied that the variables were unrelated, making factor analysis unsuitable.

Overall, the results of the reliability and validity tests provide strong evidence that the dataset is both consistent and appropriate for identifying the latent factors influencing the adoption and usage of CBDCs. The high reliability ($\alpha = 0.954$) ensures the accuracy and consistency of the measurement scale, while the superior KMO value (0.936) and significant Bartlett's Test ($p < 0.001$) confirm that the sample is statistically adequate for further analysis. These findings collectively reinforce the robustness of the research instrument and the credibility of subsequent analyses. With these preliminary validations, the study confidently proceeded to perform Principal Component Analysis (PCA) to extract and interpret the key factors shaping behavioural intentions towards CBDC adoption, laying the groundwork for meaningful insights into public acceptance of digital currencies in India.

Table 6.3 Loading of scale items on factors by Rotated Component Matrix

SI no	Factors	Component				
		1	2	3	4	5
Perceived ease of use						
1.	I prefer CBDC over other payments in future.	0.853				
2.	I intend to adopt CBDC in future.	0.784				
3.	I prefer to try CBDC in future.	0.721				
4.	I rely on to use CBDC	0.683				
5.	I will be able to quickly learn the usage of CBDC.	0.621				
6.	I believe I should use CBDC's.	0.587				
7.	I perceive CBDC to be more useful in my life.	0.557				
Innovativeness						
1.	If I get a chance, I am interested in experimenting new payment technologies.		0.789			
2.	I will be able to develop my skills using CBDC.		0.736			
3.	CBDC will be accepted by the public.		0.684			
4.	I am equipped with necessary resources to use CBDC's.		0.621			
5.	I am willing to do transactions with CBDCs.		0.594			
6.	I am confident enough to make transactions with CBDC's.		0.551			
7.	I am willing to try new payment technologies.		0.498			
Perceived Value						
1.	I view CBDC as entertaining.			0.789		
2.	I believe CBDC is secure.			0.732		
3.	CBDC do not share confidential			0.687		

	information to others.					
4.	I possess sufficient knowledge to use CBDC.			0.621		
5.	My peer group believe I will be able to use CBDC.			0.584		
6.	My attitude influences me to use CBDC.			0.522		
Perceived Convenience						
1.	CBDC ensures security and confidentiality of financial transactions.				0.688	
2.	More transparency could be achieved through CBDC.				0.612	
3.	Speedy transactions are possible through CBDC.				0.588	
Financial Knowledge						
1.	CBDC has a legal tender.					0.816
2.	RBI backs CBDC similar to cash.					0.794
3.	CBDC creates trust and ensures consumer protection.					0.762
4.	RBI will be able to monitor the use of CBDC.					0.730
5.	Sufficient support is provided by Government to use CBDC.					1
6.	I feel CBDC is compatible with other payment technologies.					0.612

(Source: Primary Data)

After establishing the reliability of the measurement scale and confirming the appropriateness of the dataset through the KMO and Bartlett's tests, Principal Component Analysis (PCA) was employed as the next step in the analytical process. PCA is a widely used statistical method in behavioural and social science research that helps to identify patterns within a large set of interrelated variables by transforming them into a smaller number of underlying components or factors. This technique reduces data complexity while retaining most of the original variance present in the dataset. The objective of using PCA in this study was to uncover the key dimensions that collectively influence the adoption and usage of Central Bank Digital Currencies (CBDCs) among the public. This method aids in determining which items share common variance and can therefore be grouped under specific constructs that represent distinct behavioural tendencies or perceptions regarding CBDCs.

To enhance the interpretability of the extracted components, Varimax rotation with Kaiser Normalization was applied following PCA. Varimax is an orthogonal rotation method that minimizes the number of variables with high loadings on each factor, thus simplifying the data structure and making the results more meaningful and distinct. The rotation ensures that each variable is strongly associated with one factor and weakly with others, which facilitates clearer conceptual interpretation of the data. The use of Kaiser Normalisation further standardizes the factor loadings, improving the comparability and stability of results. By applying this method, the researcher was able to achieve a well-defined and interpretable factor structure that effectively summarizes the underlying dimensions influencing behavioural intention towards CBDC adoption.

The results of the PCA and Varimax rotation revealed the existence of five major factors, each representing a unique dimension of users' perceptions and behavioural inclinations towards CBDCs. The first factor identified was Perceived Ease of Use, which consisted of seven statements. This factor captures the extent to which individuals believe that using the CBDC would be free of effort and easy to understand. In the context of digital finance, ease of use is often one of the strongest predictors of technology adoption, as users are more likely to adopt a financial innovation when it is user-friendly and convenient to operate. This factor thus reflects the technical and experiential simplicity that respondents associate with the digital currency system.

The second factor extracted was Innovativeness, also comprising seven statements. This factor reflects the degree to which individuals perceive themselves as open to adopting new technologies and trying out innovative financial tools. People with a higher level of innovativeness are generally more inclined to explore and adopt digital currencies like CBDCs because they perceive them as a novel and progressive financial solution. This dimension therefore represents the personal trait of technological curiosity and readiness to embrace financial innovations that challenge conventional cash-based systems.

The third factor was identified as Perceived Value, which included six statements. This construct signifies the perceived benefits or worth of using a CBDC compared to existing payment methods. It encompasses users' assessments of efficiency, cost-effectiveness, and overall utility derived from the adoption of digital currency. Respondents who perceive greater value in using CBDCs—such as faster transactions, lower fees, and enhanced transparency—are more likely to develop a favourable behavioural intention towards their adoption and usage. Thus, perceived value serves as a crucial motivational factor in shaping user acceptance.

The fourth factor, Perceived Convenience, emerged with three statements. This factor captures the practical benefits associated with the use of CBDCs, such as accessibility, time efficiency, and transactional simplicity. Convenience plays a central role in determining user satisfaction, especially in digital payment systems where speed, reliability, and ease of access are essential. The identification of this factor suggests that individuals view CBDCs as a potentially convenient medium of exchange that aligns with their daily transactional needs.

The final factor identified through PCA was Financial Knowledge, consisting of six statements. This factor measures the extent of respondents' understanding of financial concepts, digital transactions, and awareness of digital currency mechanisms. Financial knowledge empowers users to make informed decisions regarding new financial technologies, thereby enhancing their confidence in adopting CBDCs. Individuals with higher financial literacy are better equipped to comprehend the risks, benefits, and operational aspects of digital currency, making them more likely to engage with such innovations proactively.

The PCA results, complemented by Varimax rotation, distilled a large number of variables into five meaningful and interpretable factors: perceived ease of use, innovativeness, perceived value, perceived convenience, and financial knowledge. These five constructs collectively explain the key determinants shaping individuals' behavioural intention towards the adoption and usage of CBDCs. The rigorous statistical validation and dimensional reduction achieved through PCA ensure that each identified factor represents a distinct and reliable dimension of user perception. This analytical framework provides valuable insights for policymakers and financial institutions seeking to understand public acceptance of digital currencies and to design strategies that promote their effective implementation in the Indian financial ecosystem.

Table 6.4 Relationship between Factors affecting adoption and Behavioural Intention

SI.No	Factors	R value	Sig. value	N
1.	Perceived ease of	0.814	0.000	390

	use			
2.	Innovativeness	0.857	0.000	390
3.	Perceived value	0.866	0.000	390
4.	Perceived convenience	0.831	0.000	390
5.	Financial Knowledge	0.846	0.000	390

(Source: Primary Data)

The correlation analysis was conducted to examine the strength and direction of the relationship between the identified factors influencing the adoption and usage of Central Bank Digital Currencies (CBDCs) and the behavioural intention of individuals to adopt them. Correlation analysis is a key statistical technique used to determine the degree to which two variables move in relation to each other. In the context of this study, it helps to identify whether the factors extracted through Principal Component Analysis—namely, perceived ease of use, innovativeness, perceived value, perceived convenience, and financial knowledge—are significantly associated with individuals' willingness and intention to adopt CBDCs. The analysis was performed using IBM SPSS Statistics 21, which computed Pearson's correlation coefficient (r) to measure the linear relationship between each factor and behavioural intention.

As presented in Table 6.4, the correlation results reveal strong positive relationships between each of the five factors and behavioural intention towards the adoption and use of CBDCs among the public in Kerala. The correlation coefficient (r) values for perceived ease of use, innovativeness, perceived value, perceived convenience, and financial knowledge are 0.814, 0.857, 0.866, 0.831, and 0.846, respectively. These values indicate a high degree of positive association, meaning that as perceptions of these factors improve, the behavioural intention to adopt CBDCs also increases. The closeness of the correlation values to 1.0 reflects the strength of these relationships, suggesting that individuals who find CBDCs easy to use, innovative, valuable, convenient, and understandable are more likely to express a strong intention to adopt and use them in their daily financial activities.

Among the identified factors, perceived value (r = 0.866) shows the strongest correlation with behavioural intention, implying that the perceived benefits or utility derived from using CBDCs play a critical role in motivating individuals to embrace the technology. This finding highlights that people are more inclined to adopt digital currencies when they perceive tangible advantages such as reduced transaction costs, faster processing times, and enhanced security compared to traditional payment methods. The second-highest correlation is found with innovativeness (r = 0.857), reflecting that individuals who consider themselves open to adopting new technologies or financially innovative tools are more likely to develop favorable behavioural intentions towards CBDCs. This aligns with the technology adoption literature, which consistently identifies individual innovativeness as a key determinant of early adoption behaviour in digital financial systems.

Similarly, financial knowledge (r = 0.846) exhibits a strong positive correlation with behavioural intention, indicating that individuals with greater financial literacy and awareness of digital finance concepts are better positioned to understand and trust CBDCs. This finding underscores the importance of financial education and awareness campaigns in promoting public confidence and encouraging widespread CBDC adoption. Perceived convenience (r = 0.831) also demonstrates a robust relationship with behavioural intention, suggesting that users value the accessibility, ease, and efficiency of conducting transactions through digital currencies. Finally, perceived ease of use (r = 0.814), though slightly lower in comparison to the other factors, still maintains a high correlation, reaffirming that the simplicity and user-friendliness of CBDC platforms significantly influence users' willingness to adopt them. When individuals perceive that the system requires minimal effort and is easy to operate, their intention to use it strengthens correspondingly.

The p-values for all correlation coefficients were found to be less than 0.05, which indicates that these relationships are statistically significant at the 5% level of significance. In simpler terms, the probability of these correlations occurring by chance is less than 5%, providing strong evidence that the observed associations between the identified factors and behavioural intention are genuine and meaningful. Therefore, the null hypothesis—stating that there is no significant

relationship between the factors affecting CBDC adoption and behavioural intention—is rejected. This statistical outcome confirms that the five factors identified through factor analysis have a direct and significant influence on the public's behavioural intention to adopt and use CBDCs.

Finally, the correlation analysis provides valuable empirical support for the study's conceptual framework by confirming that behavioural intention towards CBDC adoption is significantly influenced by perceived ease of use, innovativeness, perceived value, perceived convenience, and financial knowledge. The high correlation coefficients highlight that these psychological and perceptual constructs are deeply intertwined with users' willingness to embrace the digital rupee. This finding emphasizes the need for policymakers and financial institutions to focus on enhancing user experience, promoting technological innovation, increasing perceived benefits, simplifying digital processes, and strengthening financial literacy. By doing so, they can create a conducive environment that fosters public acceptance and sustainable usage of CBDCs in the evolving digital financial ecosystem of India.

Discussions

The present study aims to explore the key determinants influencing the adoption and usage of Central Bank Digital Currencies (CBDCs) and to assess their contribution towards individuals' behavioural intention to use such digital currencies. In a rapidly digitalizing financial environment, CBDCs represent a crucial innovation in monetary systems, blending technology with financial inclusion objectives. The study is designed not only to identify the critical factors shaping user behaviour towards CBDCs but also to examine the inter-relationships among these factors. Understanding these associations can help policymakers and financial institutions devise strategies to encourage CBDC adoption among the general public, thereby facilitating smoother integration into the financial ecosystem.

A total of 390 individuals were selected through a convenience sampling method to represent potential users of CBDCs. The study employed a structured questionnaire comprising 32 items that measured various constructs related to adoption behaviour. To validate the constructs and ensure the robustness of the findings, the study utilized Factor Analysis and Correlation Analysis as key statistical tools. These analytical methods were instrumental in testing the hypothesized relationships among the identified variables. The reliability of the behavioural intention construct was found to be remarkably high, with Cronbach's alpha value of 0.954, indicating a strong internal consistency among the measurement items.

Further, the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was recorded at 0.936, suggesting that the data was highly suitable for factor analysis. This value indicates that the sample size and inter-item correlations were sufficient for extracting meaningful factors. The Bartlett's Test of Sphericity also yielded a statistically significant Chi-square value of 9625.254, confirming that the variables were correlated adequately for factor analysis. Such high values for KMO and Bartlett's test reinforce the appropriateness and validity of the dataset used for Principal Component Analysis (PCA). These results provided the foundation for identifying the key factors influencing behavioural intention towards CBDCs.

Using PCA, the researcher initially examined 32 items, out of which those with factor loadings below 0.400 were excluded to ensure the reliability of the constructs. Consequently, 29 items were retained and grouped into five principal factors: perceived ease of use, innovativeness, perceived convenience, perceived value, and financial knowledge. These factors collectively represent the multidimensional attributes that drive individuals' acceptance and usage of CBDCs. Each of these constructs captures distinct behavioural and cognitive aspects — such as how easy the technology is perceived to be, the degree of user innovativeness, convenience of use, perceived economic or functional value, and the role of financial literacy in shaping digital currency behaviour.

The correlation analysis revealed a strong positive relationship between each of these five factors and behavioural intention towards the adoption and usage of CBDCs. The statistical results confirmed that behavioural intention is significantly correlated with perceived ease of use, innovativeness, perceived convenience, perceived value, and financial knowledge, with p-values less than 0.01 at the 1% level of significance. This led

to the rejection of the null hypothesis, affirming the hypothesized positive associations. The findings indicate that these five factors play a crucial role in fostering favourable behavioural intentions among users, emphasizing the importance of user-friendly technology, awareness creation, and value perception. Thus, the study provides empirical insights into the psychological and contextual mechanisms influencing CBDC adoption, contributing to both academic literature and policy-oriented strategies for digital financial transformation.

Conclusion

The purpose of the study was to find out the factors that predict the behavioural intention of public towards the adoption and usage of CBDCs. The study also identifies the relationship between factors and behavioural intentions. Based on the findings of the study, it can be concluded that the factors perceived ease of use, Innovativeness, perceived convenience, perceived value, and financial knowledge significantly influence the public for the adoption and usage of CBDCs. It can be inferred that CBDC adoption is a long-term process that requires collaboration among Government entities, financial institutions, technology providers, and the public. Continuous monitoring and adjustment of strategies will be essential to ensure successful adoption and sustained usage of CBDCs. Promoting the adoption and usage of CBDCs is considered to be a multifaceted effort that requires proper collaboration, building financial knowledge, and creating commitment to provide a secure, efficient, and user-friendly digital currency. The RBI and the Government of India must work together to create an ecosystem that encourages CBDC usage while addressing the unique needs and challenges of the Indian population.

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