RESEARCH ARTICLE

Asian Research Association

ASIAN JOURNAL OF INTERDISCIPLINARY RESEARCH

DOI: 10.54392/ajir2625

Determinants of Users' intention to Adopt Central Bank Digital Currency in India: An Extended UTAUT Model with Mediating Role of Adoption Likelihood

August Keshav [a, *], Ashish Ranjan Sinha [a]

[a] Department of Humanities and Social Sciences, National Institute of Technology, Patna, India

* Corresponding author Email: augustk.phd22.hs@nitp.ac.in

DOI: https://doi.org/10.54392/ajir2625

Received: 04-10-2025; Revised: 28-03-2026; Accepted: 11-04-2026; Published: 24-04-2026

Abstract: This study examined the influence of awareness, digital financial literacy, adequate digital infrastructure, and UPI's integration on users' intention to use Central Bank Digital Currency (CBDC), with likelihood of adoption as a mediating variable. This study utilized the UTAUT framework along with extension. Data were collected by utilizing convenience and snowball sampling from 415 respondents across the Eastern Region of India. The study has employed Partial Least Squares-Structural Equation Modelling (PLS-SEM) to analyse the data, utilizing bootstrapping of 5000 samples to assess the path results. A significant influence of awareness, digital financial literacy, adequate digital infrastructure, and UPI's integration in fostering likelihood of adoption and a strong relationship between likelihood of adoption and users' intention was observed. It confirms that the likelihood of adoption significantly mediates the relationship between the established constructs and users' intention to use CBDC. This study contributes to both theoretical and practical aspects by identifying the likelihood of adoption as a key factor in gathering behavioural intention. It provides policymakers with an opportunity to address concerns related to digital financial literacy, adequate digital infrastructure, and UPI integration to strengthen users' adoption and usage of CBDC, ultimately leading to a more inclusive and efficient digital economy.

Keywords: Central Bank Digital Currency, UTAUT model, Digital Financial Literacy, Technology Adoption, Digital Payments Systems.

1. Introduction

Central Bank Digital Currencies (CBDCs) are widely seen as the next step in the evolution of fiat money. India has made major technological advances in digital payments, and its ecosystem has grown in a regulated way since the government implemented particular rules surrounding payment and settlement systems (Keshav & Sinha, 2024). As one of the most important economies in the world, India's exploration and discovery in the field of CBDC is of great importance to the international financial system (Ma, 2023). The story started in 2009 when Bitcoin (first cryptocurrency) launched with an aim to provide an alternate source of payment and settlement system by eliminating intermediaries (Nakamoto, 2008)and establishing a decentralized mechanism featuring certitude and anonymity. Since the topic of cryptocurrency secured a prominent, space in the public domain and gave the central banks an issue to react alongside with the role to manage the supply of money (Tronnier *et al.,* 2020; Nakamoto, 2008). Over the years, cryptos have been rapidly nourished and endeavored to challenge the core concept of money by ushering in decentralized finance and disorganizing the traditional financial system in the country (RBI, 2022).

From (2013-2017) with a lot of uncertainty and skepticism, the trend of cryptocurrency was in the mainstream including alarms from country's central bank i.e. Reserve bank of India to the public, and later, it turned into warnings at the end of 2017 (Shukla *et al.,* 2022). In view of associated risk, RBI issued a circular in 2018 through which they prohibited users, traders, holders, and entities from dealing and settling in virtual currencies and services related to them with immediate effect. The prohibition worked for the Central bank digital currency in India, as after the upliftment of this ban in 2020 by the Hon'ble Supreme Court (Gupta & Naulakha, 2020) it impacted the rise of CBDC, and finally, in 2022-2023 union budget, the finance minister introduced the idea of CBDC based on blockchain (Shukla *et al.,* 2022), and later on in the same year, a lot of development regarding CBDC took place, like

pilot projects, concept notes, circulars, and proposed acts, etc. the same year will also be remembered as the beginning of phase-wise pilot projects of CBDC in selected segments (Morales-Resendiz *et al.,* 2021) and cities. However, beyond the expected progress of RBI, a slowdown resulted in a dip in the wholesale-segment volume of CBDC. Transactions for the year (2023-2024) accounted for INR 0.8 (million) in financial year 2023-24, compared to INR 106.9 (million) in the previous financial year (2022-2023), (RBI, 2024) note: figures are in millions. From 2020 to 2023-24, many studies came out to add on to the unexplored field of CBDCs across the globe; even international financial authorities like the IMF, BIS, FED reserve, etc. pointed out concepts, benefits, concerns &challenges, designs, architecture, etc. (Haque & Shoaib, 2023). CBDC also has a global significance, and according to CBDC tracker Atlantic council (till archived), out of 134 CBDCs exploring nations, only 3 of them have launched CBDCs till now, i.e., Jamaica, Nigeria, and the Bahamas, and 2 nations, Ecuador & Senegal, have cancelled it after the launch; 44 are in pilot phase, 39 are in research, 19 are in development, etc. (Rossi, 2025). This shows most nations are in research and development or else in the pilot phase, and our country has already been in the pilot phase since December 2022. It has covered more than two years till now, but still its adoption rate and transaction volume have not matched the expectations of RBI and the government, as this kind of dilemma has not been observed in the case of UPI's adoption (Kumar *et al.,* 2025).

Whether we can simplify it as a habit of not switching easily from an established platform or due to lack of awareness and lack of reach into those remote areas where the digital financial literacy may be a reason, which impacts the financial decisions (Kumar *et al.,* 2023). The rise has been observed in online UPI transactions, despite of all these CBDC's have not gained that much popularity, and thus the question sticks on many aspects like the awareness; users intention (Wu *et al.,* 2024) and their potential adoption (Kaur *et al.,* 2024) which means whether CBDC's would be adopted in future or not, what people think about it, whether they will use it as an alternative or at least complement with UPI (Kamila & Shinde, 2024) as RBI and NPCI are working together since 2023 for enhancing the integration of UPI and digital rupee i.e. CBDC by encouraging the interoperability among both (NPCI, 2023). Digital financial literacy (DFL) is another crucial factor for enhancing adoption of CBDC, as it encompasses better utilization of digital financial products and associated risk with mitigation strategies (Palanisamy *et al.,* 2025). The lower financial literacy is a major constraint in adoption of fintech products by individuals (Abdallah *et al.,* 2025). Study by (Desai & Bhatt, 2026) found that there is a significant influence of DFL on users' usefulness and ease of use for CBDC usage. In the recent study by (Singh *et al.,* 2026) has explored the relationship of digital financial literacy and behavioral intention to use CBDC. Moreover, studies by (Mertzanis *et al.,* 2025) and (Wu *et al.,* 2024) have explored relationship of financial literacy and CBDC adoption. Although, existing and recent studies, have pointed out digital financial literacy as an important factor and has been widely explored in case of fintech, digital payments, and CBDC, but the focus was limited to establishing direct effect on behavioral intention rather than testing indirectly adoption. Also, the prior studies have not taken any developing region in India to study the insights of individuals. Study by (Ogunmola & Das, 2024) has elaborated the need of adequate digital infrastructure for succeeding of CBDC in the Indian context. Users for regions like the eastern India still facing the problem of better infrastructure and connectivity regarding digital payments. When we see all the aspects together, we could observe that they may influence the user's intention to adopt CBDC in future specially in Indian context. The current study is doing things out there by investigating the how awareness, adequate digital infrastructure, digital financial literacy, UPI's integration impact likelihood of adoption and users' intention to use CBDC, focusing on mediating effects of likelihood of adoption.

Although, the prior studies have confirmed these factors to be the significant determinant of CBDC adoption, but their focus is limited to direct effects instead of attention to indirect or mediating effects, especially to shape the adoption likelihood in the process of shaping users' intention. Moreover, literature demonstrates that digital financial literacy and awareness impact the financial decision-making, which results in the rise of adoption likelihood (Kumar *et al.,* 2023; Tronnier *et al.,* 2022). Even studies are more focused on an individual-centric approach and exclude the institutional aspect, as institutions play a crucial role in building a stronger base for adoption. To address this gap, the current study has included UPI integration and digital infrastructure, which are institution-focused initially and individual-focused in the end. Additionally, the existing studies have gathered insights mostly from pilot study areas, while this study has extended its boundary and included the demography based on digital payment transactions in the eastern region of India, which was not yet studied in the context of CBDC adoption.

These gaps highlight the need to understand the interplay between these constructs and users' intentions; therefore, the following research questions are proposed to align the study with these this gaps.

RQ1: What are the determinants influencing the users' intention with respect to CBDC's adoption?

RQ2: How do awareness, digital financial literacy, adequate digital infrastructure, and UPI's integration impact the likelihood of adoption and users' intention with respect to CBDC?

RQ3: How does the likelihood of adoption mediate the effects of awareness, digital financial literacy, adequate digital infrastructure, and UPI's integration on users' intention to use CBDC?

Through these questions, the contribution to the exquisite understanding of the factors and users' intention towards the adoption of CBDC will be answered.

The structure of the paper is distributed into sections and subsections and organized as follows: Digital currency and its significance to India, including history and a brief understanding of earlier studies covered in the initial portion of the study followed by a literature review, theoretical framework, and hypothesis formation in section 2. Section 3 features the methodology, study design, data collection, and analysis. Section 4 has findings. Section 5 includes discussion. Section 6 comprises implications. Section 7 involves Conclusion and Section 8 with future directions along with limitations.

2. Literature Review and Hypothesis Formation

2.1 Central Bank Digital Currency

Any currency, money, or like an asset that is available in the virtual form rather than physical is categorized under the concept of digital currency (Haque & Shoaib, 2023), and adding the centralization feature, i.e., central bank as the sole authority for handling and monitoring, makes it a digital currency of the central bank. CBDC is defined by (RBI, 2022) in their concept note as "the legal tender issued by a central bank in a digital form; it is like sovereign paper currency but takes a different form, exchangeable at par with the existing currency, and shall be accepted as a medium of payment, legal tender, and a safe store of value." In the balance sheet of the central bank, it would appear as a liability. For defining CBDC BIS presented a framework of money flower (a taxonomy of money) through a Venn diagram and elaborated various kinds of money and their categorization, like wholesale and retail forms of CBDC (Keshav & Sinha, 2024). The wholesale form of CBDC is for interbank purposes, including non-banking and financial institutions and cross-border payments, with the aim of improving effectiveness in payment and settlements, while the retail segment will be for individuals like customers and businesses to deal with their payments and settlements. The Bank for International settlements (BIS) as the primary source of coordination (Ozturkcan *et al.,* 2022) and along with different central banks has set the stage through foundation principles such as CBDC issued by central banks will not compromise the monetary and financial balance, it must coexist and complement other forms of existing mechanism, and it must promote innovation and efficiency (BIS, 2020) accompanying the core features of CBDC, design choices, and cross-border mechanisms. (Kosse & Mattei, 2022) through the survey of BIS in 2021, which was about central banks engagement in the work, motivation, and intention towards issuance of CBDC. Over the years, CBDC has gained a lot of importance and experienced exponential growth due to the research & studies by central banks, international institutions, and academia. The growth provides an avenue for central banks and governments across the globe to launch CBDCs but despite this growth, most of the nations are in the exploring phase of either research & development or pilot, with a scarcity of empirical research, as they only advanced from conception to enactment (Ma *et al.,* 2023). According to the assessment by (Andolfatto, 2021) CBDC may enhance the financial inclusion, (Ozili, 2022) also supported that through digitization of the value chain in the economy, accessibility for financial services will be enhanced and work in favor of a cashless economy and added a well-designed CBDC will not be likely to harm financial stability.

2.1.1 Theoretical framework: Application of UTAUT model

This study is framed on the model of unified theory of acceptance and use of technology framed by (Venkatesh *et al.,* 2003) in view of understanding the impact of determinants influencing users' intention regarding CBDC and its adoption (Desai, 2024). UTAUT is considered as one of the most accepted models and is extensively

used by researchers to infer the behavioral intention of individuals regarding the adoption of technology (Dwivedi *et al.,* 2019) in divergent demographic settings. The study has connected major constructs of UTAUT and, through it, established its own constructs based on past relevant works. Awareness in the study has aligned with social influence, as initially individuals seeks information through their social setting, such as peer groups, families, and media, influences individuals to adopt and use a technology. Similarly, social influence in UTAUT refers to the level of beliefs among individuals in their peer circle regarding adoption of a particular system, which includes the impact of colleagues, family, friends, social settings and social media. Digital financial literacy is connected through effort expectancy in this study, as for both, it is a must for users to learn something for attaining ease and comfort in using a technology. In fact, when users are digitally literate, they can easily and comfortably adapt to the technology and similarly in UTAUT effort expectancy described as the belief of individuals in which they find ease and comfort using a system. Adequate digital infrastructure and UPI's integration relate to facilitating conditions, as they represent support of technology and institutions for effective usage and adoption of CBDC, which is crucial for ensuring that users can access and utilize these digital financial services efficiently. In UTAUT facilitating conditions described as the degree of individuals beliefs for an organisation to provide technical infrastructure for supporting a technology, this similarity co-exist in the constructs of UPII and ADI, for which they have been connected to facilitating conditions. The likelihood of adoption is linked with performance expectancy, as users believe that using a technology would be beneficial for them, and similarly, benefits associated with using a technology enhance the likelihood of individuals adopting it with continuance. Similarly in UTAUT, performance expectancy refers to using the system would be beneficial for them, here the beliefs of users are very clear when the perceives several benefits associated with CBDC they will more likely to adopt it. Intention to use is directly connected with behavioural intention; when users perceive strong intention for a technology, it reflects their readiness towards adoption of it. It also shows the willingness of users and act as an adjacent predictor of actual usage behavior by which rest of the constructs are reflected.

Apart from UTAUT framework, behaviour-based adoption theories such as technology acceptance model (TAM) (Davis, 1989) and social cognitive theory (SCT) (Bandura, 1991), were previously used in the studies to capture users' intentions. Constructs such as awareness and digital financial literacy are linked with the core concept of cognition, which defines knowledge and self-efficacy. TAM and SCT limit their focus to cognitive perception, but UTAUT consolidates key elements such as social influence and facilitating conditions, which is beyond the individual-centric to institutional-centric approach, making it more comprehensive as the primary theoretical model in this study. For more clarity and relevance, the constructs and their sources are given in table 1 below, and thereafter, the connections have been framed in a conceptual model in figure 1.

Table 1. Showing constructs of the study connected with UTAUT framework

Study's Constructs	**Source**	**UTAUT's constructs**	**Relevance**
Awareness	(Tronnier *et al.,* 2022)	Social influence	Influence of peers and media for adoption.
Digital Financial Literacy	(Kumar *et al.,* 2023) & (Rahayu *et al.,* 2022)	Effort expectancy	Learning aid adds to adoption.
Adequate Digital Infrastructure	(Xia *et al.,* 2023)	Facilitating conditions	Infrastructure/support needed for the technology.
UPI's Integration	(Gupta *et al.,* 2023)	Facilitating conditions	Connecting a technology with another to enhance adoption among users.
Likelihood of Adoption	(Shahzad *et al.,* 2024)	Performance expectancy	Belief that CBDC could be adopted based on above constructs.
Intention to use CBDC	(Tronnier *et al.,* 2022) & (Wu *et al.,* 2024)	Behavioral Intention	Users' intention to use the technology.

source: authors own creation

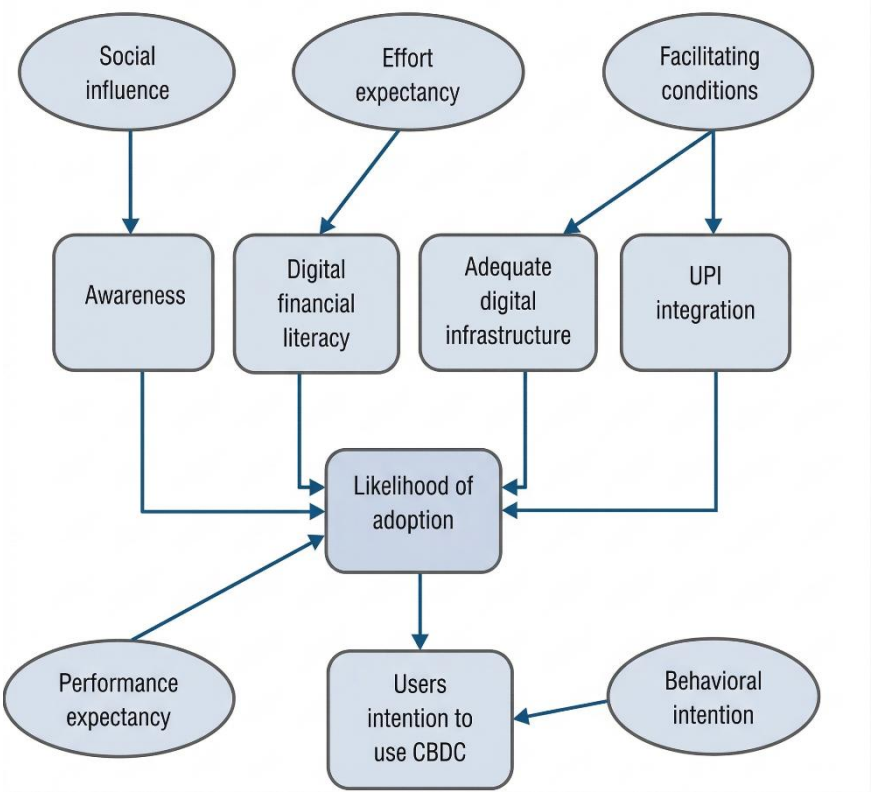

Figure 1. Conceptual model of the study, **source:** authors own creation

2.2 Awareness (AW)

In the process of spreading technology to masses, awareness stands in the center (Hall & Khan, 2003); in fact, in the field of consumer acceptance procedure, it too holds a key role in motivating individuals to adopt new technologies (Maleepumpun, 2023). In the view of accepting any financial technologies, considering Indian population awareness is considered as one of the most important determinants, and lack of it leads to one of the biggest disadvantages (Shahzad *et al.,* 2018), while complete awareness proved to be significant in affecting users' intention for using fintech activities, confirmed years ago by a study in the UAE (Jasimuddin *et al.*, 2017). When a person has in-depth awareness regarding any technology, it swings their perception and preparedness for more likelihood to adopt (Shahzad *et al.,* 2024; Tronnier *et al.,* 2022) Also, it has been observed in cryptocurrency adoption that awareness has invariably reinforced positive intentions among users to adopt it (Kakinaka & Umeno, 2022). Prior to the past empirical evidence stated above, we must include awareness (AW) as one of a prospective determinant while studying the behavioral intentions of users and the interplay of their likelihood to adopt CBDC. Even prior studies have failed to integrate AW with theoretical framework and treated it descriptively. The study aims to integrate AW with UTAUT's social influence for measuring the extent to which individuals are aware that they would be using this technology in the future as a payment mechanism and whether they agree for adoption or not. Thus, in view of addressing the gaps discussed above, we propose the following hypothesis: H1: Awareness significantly influences Likelihood of Adoption for users' intention to use CBDC.

2.3 Digital Financial Literacy (DFL)

Considering consumer involvement in financial activities, i.e., usage of products and services in financial markets, financial literacy is universally recognized as an important factor (Lusardi & Mitchell, 2013), and recent & expected changes in the financial world urge the industry to redefine financial literacy by adding a digital context to it (Kass-Hanna *et al.,* 2022) termed as digital financial literacy. Digital financial literacy is a multidimensional concept that includes knowledge regarding digital financial products and services, awareness of risks associated with them, knowledge to control the risks, and knowledge of consumer rights and redressal (Morgan *et al.*, 2019), according to

the (Alliance for Financial Inclusion, 2021) the concept of DFL signifies the knowledge, skills, confidence, and competencies for using digital financial services safely and forming informed financial decisions. For effective usage of digital financial services, DFL is considered an essential prerequisite and a lack of DFL is an impediment to having logical and effective usage of digital financial services (Ravi Kumar *et al.,* 2022). Digital financial services include both financial and internet-based risks and adequate understandings of these risks helps individuals in making financial decisions for adopting financial services (Long *et al.,* 2023), and few studies have also empirically investigated the role of financial literacy in the adoption of financial services (Foster *et al.,* 2022; Li *et al.,* 2020; Morgan & Long, 2020).

Studies have shown it as a significant determinant in shaping adoption of mobile banking, m-wallets, and digital payment systems by enhancing users' compliances and reducing complexity. However, despite the accepted significance, most of the studies have included either perceived risks or privacy as their determinants regarding CBDC adoption. Since CBDC differs from traditional mobile banking and digital payment systems, it requires a higher level of understanding, and this aspect was underexplored previously for it. Considering past evidence and studies that included DFL in the adoption of fintech products, this study contributes to existing literature by adding DFL from general digital payment systems to CBDC's ecosystem, particularly in the context of the eastern region of India. For the purpose we made the following hypothesis: H2: Digital financial literacy significantly influences Likelihood of Adoption for users' intention to use CBDC.

2.4 Adequate Digital Infrastructure (ADI)

The digital infrastructure plays an important role in determining innovation (Du & Wang, 2024); it is considered a basic tool for using technology smoothly without any obstacles, like proper internet and network connectivity in urban and rural areas, and a well-equipped mechanism to deal with financial products by banks and financial institutions. Digital infrastructure acts as an important factor in the transformation of the products, services, and the entire process of businesses (Sestino *et al.,* 2020) and in recent years, the digital infrastructure of our country has experienced transformative advancement, which has helped the nation to lead globally in terms of adopting technology. Prior to the advancements, India always tried to adopt technology in the financial world, and it could be seen in the form of UPI, RTGS, IMPS, NEFT, etc. (Haque & Shoaib, 2023; Fahad & Shahid, 2022).

In 2022, India started exploring central bank digital currency (CBDC) through pilot projects in their major cities, which highlights the intention of the government and RBI that they will launch it in upcoming years, and an adequate digital infrastructure will be necessary for operating it smoothly (BIS, 2021) and adoption of CBDC might reach its expected result if it equates the needs of end users without hindering the existing technology mechanism. The apparatus of CBDC seeks to deliver secure, efficient and accessible platform that will assist in innovative and transformation in the landscape of country's financial environment (Ogunmola & Das, 2024) but the question arises that whether the current digital infrastructure is well equipped for the users to adopt CBDC or not and what are their intentions regarding the current infrastructure. Study by (Koparan, 2025) also highlighted it as an important driver in adoption of CBDC while (Sindakis & Showkat, 2024) highlighted that more digital technology will be adopted if users find it useful and easy to use. Hence, we have included adequate digital infrastructure (ADI) as one of the determinants in analyzing the user's intention regarding CBDC adoption, most of the studies have included it as contextual construct rather connecting it with any framework. To address this gap, we have integrated it with UTAUT's facilitating condition, and based on this empirical evidence and insights, we have made the following hypothesis: H3: Adequate digital infrastructure significantly influences Likelihood of Adoption for users' intention to use CBDC.

2.5 UPI's Integration (UPII)

UPI stands for Unified Payments Interface. According to (NPCI, 2016), it is a mechanism that empowers numerous bank accounts into an individual mobile application (of any participating bank), combining various banking features, seamless fund routing, and merchant payments on the same platform. UPI was launched in 2016 by RBI as an effort to elevate digital transactions and overhaul the country's payment mechanism (Cornelli *et al.,* 2024) and the National Payments Corporation of India (NPCI), a non-government & not-for-profit organization, has operated it

since 2016. Globally UPI is succeeding as one of the fast payment systems, like other widely accepted alternatives (Jon *et al.,* 2024). UPI in India has reached the masses and been adopted in localized as well as widely advanced areas by focusing on high frequency and low-volume transactions (Kumar *et al.,* 2025). The adoption of UPI in India and post-pandemic situations has opened the doors for the government to introduce CBDC, as UPI was one of the most used payment mechanisms, but not only its usage the government has to overwhelm the impediments of cryptocurrency (Razi-ur-Rahim *et al.*, 2024) and for that purpose, they introduced the idea of CBDC in 2022. Introducing CBDC does not mean that they are going to replace UPI with it; in fact, competition plays an important role among numerous payment systems and positively affects the carrying out of users intentions (Mukhopadhyay & Upadhyay, 2022) and for the same reason, both the authorities (RBI & NPCI) are working together on the integration of UPI with CBDC for delivering interoperability features (NPCI, 2023), as there are empirical evidence (Becks *et al.,* 2023) that supports the need for integration and unfamiliarity leads to low adoption. Study by (Gupta *et al.,* 2023) also supported that unfamiliarity of users with existing payment systems has a negative exposure with the same kind of payment systems offered in the future and (Arauz *et al.,* 2021) highlighted in their study that interoperability is a required feature for implementing CBDC successfully, as CBDC failed and was cancelled in Ecuador due to its direct usage instead of linking with any digital payment application. Studies have supported the need for integration and interoperability, but limited studies have made it as a determinant to study the user's intention for adopting CBDC, so including UPI's integration (UPII) as an influencing factor may help in framing policy implications for the concerning authorities in the form of obtaining the mindset of the population regarding the pros and cons of integration and adoption. Thus, considering the above, we have made the following hypothesis: H4: UPI's Integration significantly influences Likelihood of Adoption for users' intention to use CBDC.

2.6 Likelihood of Adoption and Intention to Use CBDC

In the view of analyzing the adoption of electronic payments and cryptocurrencies, there are numerous studies by (Jon *et al.,* 2024; Saroy *et al.,* 2023; Saroy *et al.*, 2022; Wu *et al.,* 2022; Sharma *et al.,* 2024; Ma *et al.,* 2023; Leong *et al.,* 2020; Affandi *et al.*, 2024; Saiedi *et al.,* 2021; Balvers & McDonald, 2021; Dash *et al.,* 2022; Choithani *et al.*, 2024) available, and also the studies related to CBDC adoption explored by (Tronnier *et al.,* 2022; Adikoeswanto *et al.,* 2022; Sharma & Mishra, 2020; Gupta *et al.,* 2023; Kaur *et al.,* 2024; Mombeuil, 2020; Singh & Kumar, 2025; Maleepumpun, 2023). Out of these maximums of the literature for studying the adoption of technologies have made the theories of UTAUT &TAM as their conceptual base, where the outcome of this adoption is linked to the behavioral intention of users to use a technology (Erwanti & Prasetyani, 2023; Liu *et al.,* 2024; Venkatesh *et al.,* 2003) in UTUAT highlighted that the perceived likelihood of adoption affects users' intention; (Chua *et al.,* 2025; Kaur *et al.,* 2024) found that adoption readiness positively influences users' intention regarding CBDC; (Khan & Abideen, 2023) in their study pointed out that there is a strong correlation between adoption and users' intention to use a technology.

Existing studies have pointed out regarding adoption reading and users intention, but they failed to connect or integrate it with theoretical framework such as UTAUT. Considering the above studies as empirical evidence, this study has connected LOA with UTAUT's performance expectancy which signifies as getting benefits from adopting a technology. Here, likelihood of adoption (LOA) intends to play a vital role in determining intention of users (ITU) to use CBDC, and we can say that "the more likely users are to adopt CBDC, the stronger their intention will be to use it". And thus, we have made the following hypothesis: H5: Likelihood of Adoption significantly influences users' intention to use CBDC.

2.7 Mediating Role of Likelihood of Adoption

In accordance with the empirical evidence and established assumptions of this study, each determinant will have an influence on the likelihood of adoption, and the outcome will be the intention of users, which means whether their likelihood will turn into their intention to use CBDC or not. In the lieu of getting users intention as an outcome, LOA will act as a mediator and will strengthen the intention of users to use it too. LOA is distinct from behavioral intention, as behavioral intention is an outcome of various adoption models such as TAM, SCT and UTAUT. LOA is an early stage of individual's decision making, it displays openness and readiness towards opportunities in executing a certain behavior, while behavioral intention is considered as more planned and goal-oriented behavior of individuals

(Pomery *et al.,* 2009; Barber *et al.,* 2012). Considering CBDC in very early stage i.e. pilot-phase, it was appropriate to introduce LOA as a mediating construct rather to go directly for behavioral intention. LOA is based on the construct of UTAUT i.e., performance expectancy and it was used as a mediator in the study by (Kaur *et al.,* 2024) on CBDC and highlighted the effect of all the constructs of the model and observed a positive impact on the behavioral intention of users. (Adikoeswanto *et al.,* 2022) analyzed the role of adoption readiness on attitude towards using a technology and found it significant, and even (Acheampong *et al.,* 2017) found out about the empirical relationship between adoption likelihood and their intention to use the technology. Based on the above discussions, it is perceived that there is the existence of an indirect relationship between awareness, digital financial literacy, adequate digital infrastructure, UPI's integration on users' intention to use CBDC through likelihood of adoption, and to test this indirect effect considering CBDC. We have made the following hypothesis: H6: Likelihood of Adoption significantly mediates the relationship between Awareness, Digital financial literacy, Adequate digital infrastructure, UPI's Integration and users' intention to use CBDC.

3. Methodology

3.1 Research Design

Structural equation modelling (SEM) was employed in this study to investigate the influence of Awareness (AW), Digital financial literacy (DFL), adequate digital infrastructure (ADI), UPI's Integration (UPII) on users Intention to use (ITU) CBDC with Likelihood of adoption (LOA) as an efficacious mediating variable. For analyzing and measuring this complex interrelationship between the constructs, a quantitative approach was deliberated with appropriate potentiality. With this approach, testing of hypotheses and extraction of evident outcome will be executed to align with the study's aim of recognizing pragmatic tactics for enhancing users' intention towards adopting CBDC. Items of the constructs that intends to measure AW, DFL, ADI, UPII, LOA, and ITU were adapted from the developed and validated past scales, and all the items of the scale were measured with a five-point Likert scale as used by the past studies. Scale items for awareness were adapted from (Tronnier *et al.,* 2022), for digital financial literacy (Kumar *et al.,* 2023; Rahayu *et al.,* 2022) were sourced; the items for adequate digital infrastructure were adapted from (Xia *et al.,* 2023) and items for the construct UPI integration were adapted from (Gupta *et al.,* 2023). The items of construct likelihood of adoption were adapted from (Khan & Abideen, 2023) and for the construct intention to use were adapted from (Tronnier *et al.,* 2022; Wu *et al.,* 2024).

3.2 Sampling Design and Data Collection

The survey method has been identified as an appropriate tool for analysing the primary data and gathering users' insights regarding the determinants of CBDC adoption. After identifying all the possible determinants in the study, a structured questionnaire was framed with categorizing sections for each variable, including demographic profiles. The target population for the study was the individuals living in three major states of eastern India, including Bihar, Odisha, and West Bengal, and for collecting the data, three clusters, based on economic activities and digital payment transactions including UPI, wallets, and cards (Phone pe, 2024), were formed, utilizing convenience and snowball sampling methods due to the rise in the trend of non-response among the population (Brick & Williams, 2013) while conducting the survey. The survey was executed across these clusters via Google Forms as well as by researchers themselves reaching directly to the respondents in physical form. The tenure of data collection took three months, covering the entire targeted population with systematic measures and promising anonymity with proper consent were part of the guidelines mentioned in the questionnaire. The survey achieved a desired response despite the diverse population in the eastern states of India, as out of 450 collected questionnaires, 415 were found fit for the target population after data cleaning. As per the parameters by (Kock & Hadaya, 2018) for the sample size requirement to use SEM at larger than the true minimum parameter but not too much larger and we have applied a 10–15-point observation parameter for which response of 415 out of overall collected is appropriate as directed in the literature. Respondent's demographic profile is summarized in table 2 given below:

Table 2. Demographic profile of respondents

Category	Items	Respondents	Percentage (%)
Gender	Male	250	60.2
	Female	165	39.8
	Total	**415**	**100**
Age	18–24	102	24.6
	25–34	168	40.5
	35–44	102	24.6
	45–55	26	6.3
	55 & above	17	4.1
	Total	**415**	**100**
Occupation	Student	111	26.7
	Salaried	178	42.9
	Self-employed	65	15.7
	Unemployed	21	5.1
	Housewives	33	8.0
	Retired	7	1.7
	Total	**415**	**100**
Education	High School	73	17.6
	Diploma/Professionals	18	4.3
	Graduate	178	42.9
	Master's	100	24.1
	PhD	46	11.1
	Total	**415**	**100**

source: authors own creation

3.3 Data Analysis and Its Approach

For analyzing the cross-sectional data of the study, the PLS-SEM (Partial Least Squares-Structural Equation Modeling) approach was utilized as it was found suitable & effective in evaluating the complexity of interrelationships among variables and due to its robustness against non-normal distribution (Leong *et al.,* 2019; Dash & Paul, 2021) compared to other methods, especially in technology and social science-based studies. Smart PLS 4 was utilized to analyze the data of PLS-SEM approach, as literature considered it as efficient software for the same (Hair *et al.,* 2019; Ringle *et al.,* 2023) along with empirical evidence, and the study will descriptively analyze the following:

3.3.1 Measurement Model

Measurement model assessment comprises of:

a) *Reliability and validity-* using Cronbach's alpha and composite reliability's score the evaluation was assessed and values above 0.7 considered appropriate.

b) *Convergent validity-* assessment of the Average Variance Extracted (AVE) with values exceeding 0.5 was carried out ensuring the adequate variance among their indicators.

c) *Discriminant validity-* for ensuring the variation between one construct from other the Fornell-Larcker criterion was utilized with aim to confirm that no constructs was measured on similar criteria and along with HTMT.

3.3.2 Structural Model

Structural model assessment comprises of:

a) *Relationships testing*: the test of relationship among the variables established i.e. AW, DFL, ADI, UPII, LOA and ITU was performed.

b) *Direct effect evaluation:* testing of direct effect among the established variables in the study was executed.

c) *Mediating role/ Indirect effect:* for confidence intervals of indirect effects, the assessment of mediating role of LOA through bootstrapping of 5000 samples was carried out.

4. Findings

4.1 Measurement Model Assessment

Table 3. Factors loadings

Variable	Item	Loading	Alpha	CR	AVE
ADI	ADI1	0.803	0.841	0.893	0.677
	ADI2	0.827			
	ADI3	0.818			
	ADI4	0.842			
AW	AW1	0.735	0.738	0.834	0.557
	AW2	0.770			
	AW3	0.752			
	AW4	0.727			
DFL	DFL1	0.762	0.839	0.886	0.609
	DFL2	0.798			
	DFL3	0.779			
	DFL4	0.769			
	DFL5	0.792			
UPII	UPII1	0.833	0.898	0.925	0.710
	UPII2	0.878			
	UPII3	0.845			
	UPII4	0.818			
	UPII5	0.839			
LOA	LOA1	0.774	0.838	0.890	0.670
	LOA2	0.844			
	LOA3	0.828			
	LOA4	0.828			
ITU	ITU1	0.790	0.910	0.928	0.650
	ITU2	0.784			
	ITU3	0.858			
	ITU4	0.756			
	ITU5	0.819			
	ITU6	0.837			
	ITU7	0.792			

As discussed above, the initial phase of data analysis begins with the measurement model, and for evaluating measurement model, we have assessed reliability & validity, convergent validity, and discriminant validity of the constructs. Starting from reliability and validity, Table 3 highlights the strong internal consistency as the values of composite reliability (CR) exceed the threshold of 0.70 and the values of average variance extracted (AVE) exceed 0.5 for all the constructs, as suggested by (Hair *et al.,* 2017) Convergent validity evaluates reliability and validity. As highlighted in figure 2, the values of factor loading in all the items of the constructs exceed the threshold of 0.7 suggested by (Hair *et al.,* 2020) which authenticates that the distinguished variables appropriately acted for their individual constructs.

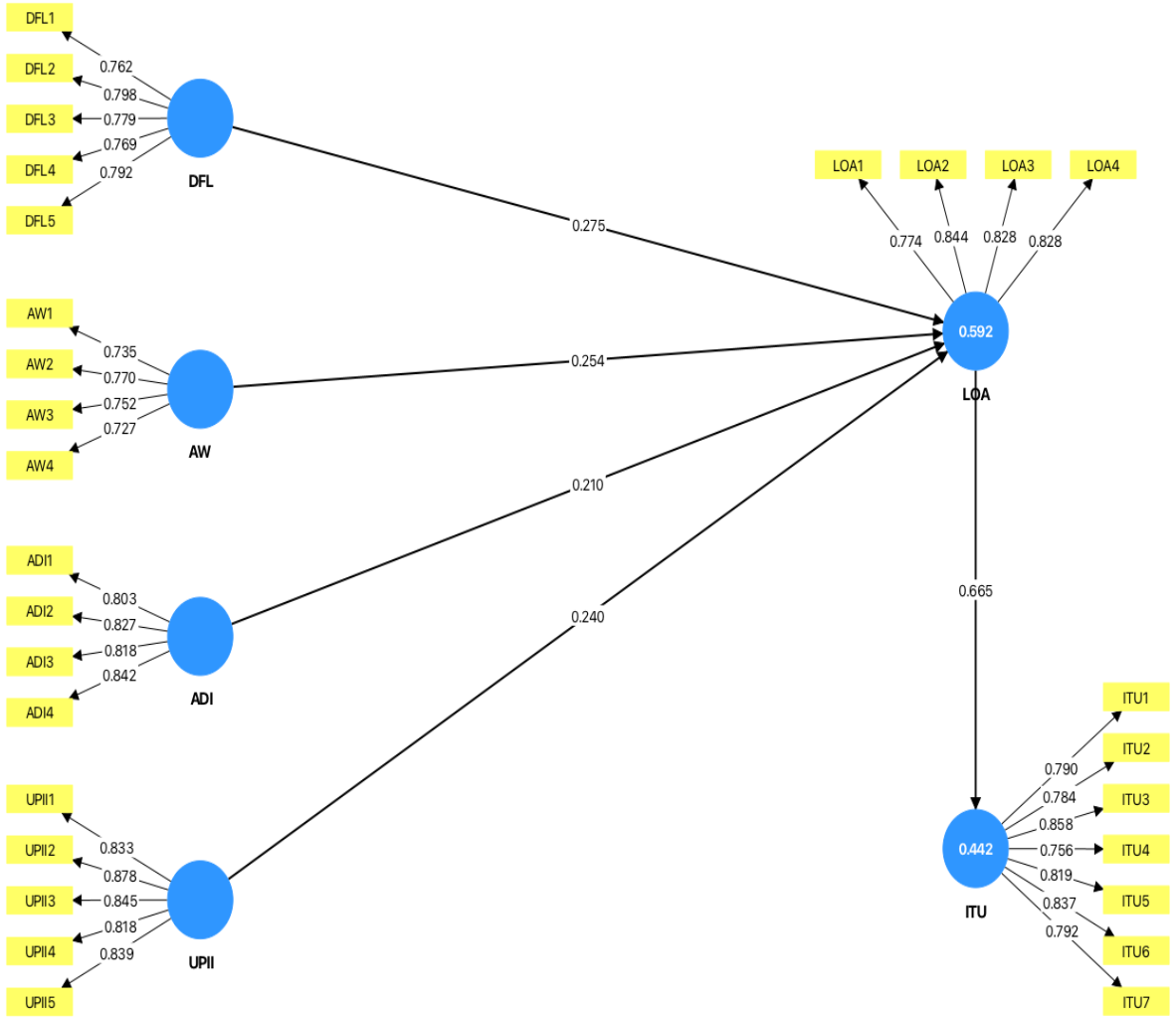

Figure 2. Measurement model explains relationship between Awareness, Digital financial literacy, Adequate digital infrastructure, UPI's Integration and users' intention to use CBDC, having likelihood of adoption as mediating construct. Source: authors own creation

In this study, discriminant validity evaluates the distinction between constructs and variables with two methodologies, i.e., Fornell Larcker criterion and Hetero Trait- Mono Trait ratio (HTMT). As per (Fornell Larcker, 1981) criterion, which evaluated the distinction among the constructs by assessing whether the square root of AVE for each latent variable (bolded diagonal values) exceeding its other corresponding latent variables (non-diagonal values) see table 4, recommended by (Hair *et al.,* 2013) and (Larcker, 1981). While HTMT is based on the values of threshold, the HTMT ratio as highlighted in table 5 is less than the threshold of either 0.85 or 0.9 which means the results are appropriate with having no issue in discriminant validity as per (Henseler *et al.,* 2015) and (Hair *et al.,* 2019). Both the methodologies confirm that there is a distinction in the scale items for each construct observed in Table 4 and 5, respectively. These outcomes jointly verified the strength of the measurement model and formulated a powerful base for structural model analysis.

Table 4. Discriminant validity (Fornell Larcker criterion)

Variables	ADI	AW	DFL	ITU	LOA	UPII
ADI	**0.823**					
AW	0.415	**0.746**				
DFL	0.446	0.449	**0.780**			
ITU	0.640	0.530	0.490	**0.806**		
LOA	0.592	0.575	0.612	0.665	**0.819**	
UPII	0.641	0.461	0.540	0.755	0.640	**0.843**

Source: authors own creation

Table 5. Discriminant validity (HTMT)

Variables	ADI	AW	DFL	ITU	LOA	UPII
ADI						
AW	0.518					
DFL	0.524	0.562				
ITU	0.724	0.641	0.555			
LOA	0.679	0.713	0.732	0.736		
UPII	0.731	0.562	0.615	0.834	0.718	

Source: authors own creation

4.2 Structural Model Assessment

After the establishment of reliability and validity of constructs through assessment of measurement model, now examining the structural or inner model will provide the empirical support through the outcome, which involves the testing of hypothesized relationships among the constructs (Hair *et al.,* 2021). The structural model was analyzed with smart-PLS in which bootstrapping technique with sample of 5000 was employed by following the guidelines of (Hair *et al.,* 2020) that helped in getting insights about the presumed interrelation among the constructs highlighted in (figure 3).

The result outlined in table 6, demonstrated the significant direct effects of all the hypotheses:

H1: AW→LOA, Awareness (AW) significantly influences Likelihood of Adoption (LOA) as (β=0.254, t=5.238, p< 0.001) which indicates that awareness among individuals is an important determinant as through this positive relationship we may interpret that more the individuals having awareness regarding CBDC the more will be their likelihood to adopt it.

H2: DFL → LOA, Digital financial literacy (DFL) was positively related to Likelihood of Adoption (LOA) having (β=0.275, t=3.930, p< 0.001), being the second strongest influencing determinant it signifies that individuals having a strong digital financial literacy regarding CDBC will increase their chances to adopt it.

H3: ADI → LOA, Adequate digital infrastructure (ADI) exhibits a significant effect on Likelihood of Adoption (LOA) as (β=0.210, t=3.859, p< 0.001) which demonstrates that if digital infrastructure will be adequate for individuals i.e. without any interruptions, their likelihood towards adopting CBDC will rise.

H4: UPII → LOA, UPI's integration (UPII) emphasized a significant influence on Likelihood of Adoption (LOA) as (β=0.240, t=4.011, p< 0.001) which reveals that individuals are more likely to adopt CBDC as it would be connected to similar digitalized platform such as UPI.

H5: LOA → ITU, Likelihood of Adoption (LOA) had a substantial positive effect on users Intention to Use (ITU) CBDC, as (β=0.665, t=18.256, p< 0.001) which underscores the essential role of Likelihood of Adoption (LOA) in making the intention of users to use it too, as more they have likelihood towards adopting CBDC more their intention will be stronger to using it.

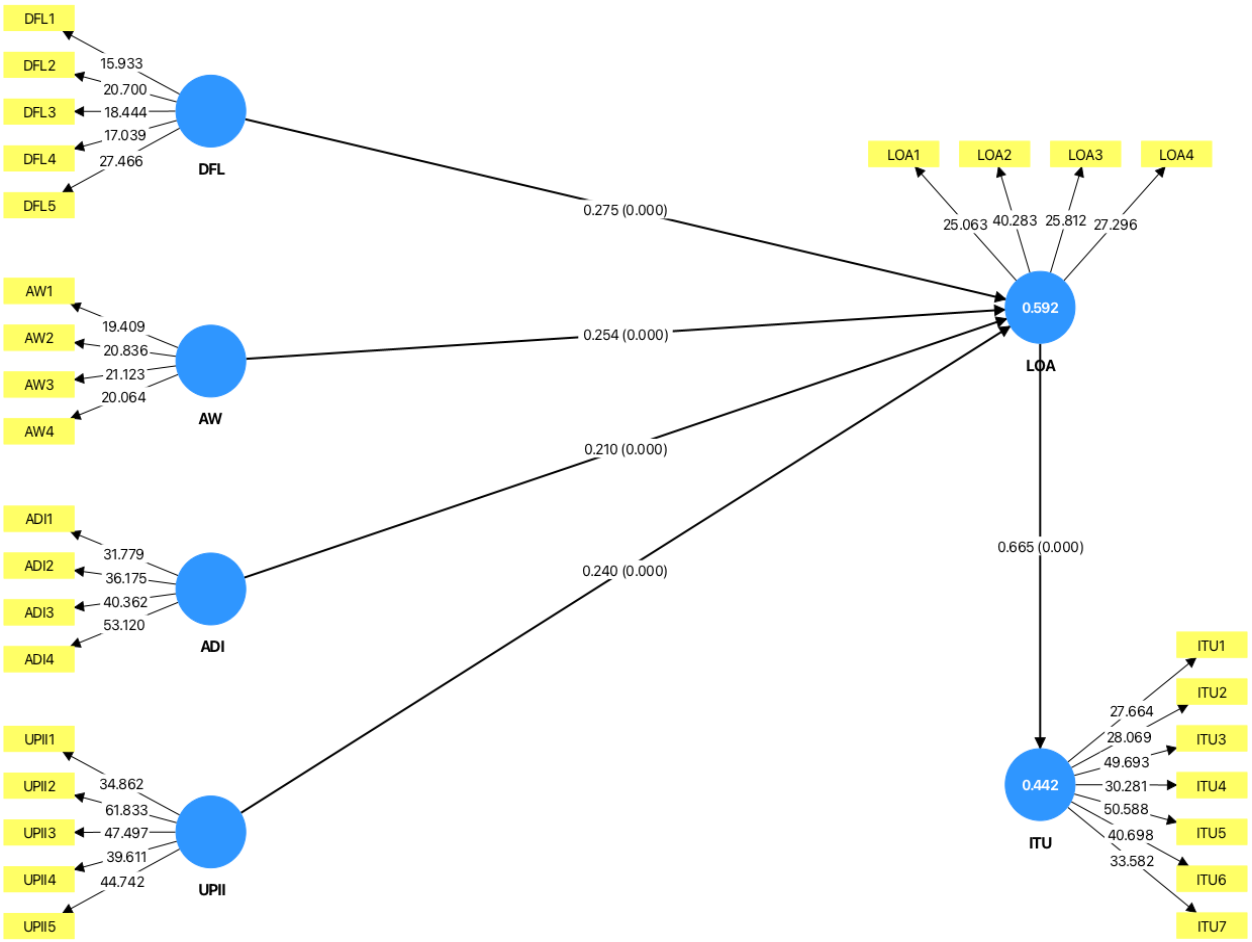

Figure 3. Structural model, explains hypothesis testing between Awareness, Digital financial literacy, Adequate digital infrastructure, UPI's Integration and users' intention to use CBDC, having likelihood of adoption as mediating construct. Source: authors own creation

The findings of direct effect progressively supported the conceptual framework by focusing on Awareness, Digital financial literacy, adequate digital infrastructure, UPI's Integration as crucial determinants of Likelihood of adoption, and the final impact on users' intention to use CBDC. From the implications of the present study, important determinants, especially like ADI and UPII were addressed, which signifies that these may become a game changer for CBDC adoption, as both will be critical in the success of CBDC focusing on the least developed population, like Bihar and Odisha especially, where technology and its infrastructure are considered as an important aid that cannot be ignored.

Table 6. (Direct effect)

Hypothesis	Beta value(β)	STDEV	T values	P values	Decision
H1 AW → LOA	0.254	0.048	5.238	0.000	Supported
H2 DFL → LOA	0.275	0.070	3.930	0.000	Supported
H3 ADI → LOA	0.210	0.055	3.859	0.000	Supported
H4 UPII → LOA	0.240	0.060	4.011	0.000	Supported
H5 LOA → ITU	0.665	0.036	18.256	0.000	Supported

Source: authors own creation

This part of structural model assessment is very crucial as it analyzes the mediation effects of the determinants given in the (table 7) and testing of the hypothesis i.e. H6: Likelihood of adoption significantly mediates the relationship between Awareness, Digital financial literacy, Adequate digital infrastructure, UPI's Integration and users' intention to use CBDC. It was ascertained from the findings that Likelihood of adoption (LOA) significantly mediated the relationship between Awareness (AW), Digital financial literacy (DFL), adequate digital infrastructure (ADI), UPI's Integration (UPII) and users' Intention to use (ITU) which indicates that:

a) The relationship between Awareness (AW) and Intention to use (ITU) was mediated by Likelihood of adoption (LOA) as (β=0.169, t=4.935, p< 0.001), which signifies that individuals having awareness would likely to adopt CBDC and they will intentionally use it too.

b) Likelihood of adoption (LOA) mediated the relationship between Digital financial literacy (DFL) and users Intention to use (ITU) significantly as (β=0.183, t=3.949, p< 0.001) which reveals that users having better digital financial literacy increases their likelihood to adopt CBDC and eventually increases the intention to use it.

c) Adequate digital infrastructure (ADI) and user Intention to use (ITU) was significantly mediated by Likelihood of adoption (LOA) as (β=0.140, t=3.868, p< 0.001) which highlights that improvement in infrastructure will enhance users adoption and it will elevate the users to use it.

d) Finally, Likelihood of adoption (LOA) positively mediated the relationship among UPI's integration (UPII) and users Intention to use (ITU) CBDC as (β=0.159, t=3.642, p< 0.001) which implies that integrating CBDC with popular payment programmes like UPI that would increase their adoption readiness resulting into increase in users intention to use CBDC.

Table 7. (Mediation effects)

Hypothesis 6	Beta value(β)	STDEV	T values	P values	Decision
AW → LOA → ITU	0.169	0.034	4.935	0.000	Supported
DFL → LOA → ITU	0.183	0.046	3.949	0.000	Supported
ADI → LOA → ITU	0.140	0.036	3.868	0.000	Supported
UPII → LOA → ITU	0.159	0.044	3.642	0.000	Supported

Source: authors own creation

Based on the findings of mediation effects, it was confirmed that Likelihood of adoption (LOA) was a key determinant by which the constructs influence the users intention to use CBDC and thus from the implications of the present study it is ascertained that for successfully promoting the CBDC adoption authorities must have to systemize the digital financial literacy, Adequate digital infrastructure, Integration with existing payment programmes and raise the awareness among public specially in the eastern region.

5. Discussion

From the results of the study, it was ascertained that the relevance of all the identified determinants was found to be supportively influencing the outcome in support of *RQ1*. The study was based on the UTAUT framework for analysing the user's intention regarding the adoption of CBDC. This study purposely extended the UTAUT model by adding Likelihood of Adoption (LOA) as a mediating construct and introduced a conceptual framework that examined the role of awareness, digital financial literacy, adequate digital infrastructure, and UPI's integration in determining users' intention to adopt CBDC, particularly in regions like the East. Regarding the support of *RQ2,* the result of the study specifies the importance of awareness (H1) as it improves the perception of the users in enhancing the likelihood of adoption, which signifies that as more individuals have the knowledge and understanding regarding a technology, their adoption readiness for the same will increase, and this aspect was found similarly in the case of CBDC. It confirms that to achieve performance expectancy, users must possess basic awareness to avoid the complexities associated with CBDC, as familiarity with the technology is still developing at this stage. This finding

aligns with the study by (Tronnier *et al.,* 2022) which validates the consistency of the construct and its alignment with UTAUT's social influence.

The result of (H2) confirms the existence of a positive relationship between digital financial literacy and Likelihood of Adoption (LOA), as individuals having knowledge regarding digital financial products and services, associated risks, redressal management will improve their digital financial literacy, which turns into more adoption readiness, and a similar result was found regarding CBDC. The substantial direct effect confirms that DFL is a core determinant in increasing users' likelihood to adopt CBDC, as users with higher digital compliances possess a greater likelihood to adopt a technology. Comparing with other variables, DFL shows the stronger effect, as it is the core foundation of a technology adoption study. If individuals attain the understanding and awareness for using financial products and services digitally, they would likely have a stronger intention to use it. Without understanding and awareness of rest, individuals cannot effectively use technology. Unlike other digital payment systems such as UPI, mobile wallets, and banking applications, the mechanism of CBDC is complex, which might be due to non-familiarity among the individuals. Since the concept of DFL is novel in the Indian context as digital payment systems were widely accepted after demonetization in 2016, this might be one of the reasons behind emergence of DFL as the strongest predictor. Moreover, the aspect of DFL relates to cognitive evaluation of individuals, which makes it a strongest predictor, and studies have also highlighted the importance of DFL and CBDC adoption (Singh *et al.,* 2026; Desai & Bhatt, 2026). Similarly, in the case of H3, the significant relationship was observed between adequate digital infrastructure and likelihood of adoption of CBDC, which delves into the fact that if fast, secure, and efficient access to technology is delivered to individuals, there will be strong chances among them to adopt it, and the result supports the same. Beyond the theoretical angle, digital infrastructure is one of the active enablers of CBDC adoption, especially for developing regions like eastern India, and proper addressing of infrastructure boosts confidence among users for using a technology. Results of H3 signifies the importance of technological readiness and digital infrastructure supporting adoption of digital payment systems which is consistent with existing studies (Ogunmola & Das, 2024; Koparan, 2025; Sindakis & Showkat, 2024). Likewise, in the case of H4, the link between UPI's integration and adoption of CBDC was also found to be significant, which emphasizes that the likelihood of adopting the CBDC will be enhanced if individuals are provided an integration feature of attaching it with a program like UPI. In fact, we can say that users having familiarity with existing payment programs can improve the chances of adopting them too (Gupta *et al.,* 2023) and the findings of H4 aligns with existing studies. Since UPI has actively working in India since 2016, which might give an additional advantage for the emerging economy of India, as familiarity with existing payment method will help in enhancing adoption of CBDC through interoperability. This study also points out the significance of the likelihood of adoption in observing the intention of users regarding CDBC (H5); it leads to the outcome of whether the users will use it or not, and based on the results, a strong positive effect was observed, which empirically signifies that if users have a strong likelihood regarding the CBDC's adoption, they will surely use it. The findings aligns with the existing global studies by (Liu *et al.,* 2024; Chua *et al.,* 2025) and Indian study by (Kaur *et al.,* 2024) which validates the consistent result of adoption likelihood and users intention to use CBDC.

Considering mediation analysis in (H6), the key role of likelihood of adoption (LOA) was observed, which links awareness, digital financial literacy, adequate digital infrastructure, and UPI's integration in determining users' intention to use CBDC. It indicates that users do not form intention directly; it is initially evaluated and driven by adoption likelihood, which shows their readiness towards adopting a technology. Findings of this study are mostly consistent with the existing studies in the domain of CBDC's adoption (Adikoeswanto *et al.,* 2022), also globally. DFL's significant influence was observed with adoption likelihood aligned in the prior recent studies across the countries, which validates the inclusion of DFL as the crucial determinant in this model. The inclusion of digital infrastructure as a determinant aligns with existing studies conducted in emerging and developing economies, which is also highlighted in the literature section of this study. Additionally, the substantial mediating effect of LOA was also consistent with existing studies suggesting that instead of a direct response for adoption of CBDC, individuals evaluate multiple factors that make themselves ready to adopt it. However, contextual differences were observed in adding UPI's integration as a construct in the model; studies across the globe have included either perceived risk or trust, which makes inclusion a unique driver for CBDC adoption. Witnessing widespread use of UPI is different from the global scenario, as familiarity with digital payment systems is higher, which might help enable experiences for CBDC usage, and these are less highlighted in existing recent studies. Overall, this study first contextualized the UTAUT extension with a view for the CBDC ecosystem and for novel insights aligning with traditional constructs.

Then the inclusion of two institution-based factors, ADI and UPI integration, has enhanced the limited boundary of individual-centric insights. Third, focusing on the dual path of direct and indirect/mediated effects has contributed towards substantial perception regarding acceptance of a technology and requirement of strategies for implementing it in the regions like Bihar, Odisha, and West Bengal.

6. Implications

Based on the findings of the study, following are the proposed theoretical and practical implications:

6.1 Theoretical Implications

The theoretical implications of the study have been expanded in several ways, particularly by extending the traditional UTAUT framework to include the likelihood of adoption (LOA) as a mediating construct through empirical confirmation. This extension aims to show that perceived adoption is not just an outcome but could also be a key determinant in influencing users' behavioural intentions, which is considered important for advancing future research on CBDC adoption. The study focused on a specific demographic, including the respondents of different age groups ranging from 18 to 55 and above, which contributes to the literature regarding the adoption of CBDCs with user behaviours and their preferences. The selected demography is an emerging digital state and therefore could prove significant for scholars and policymakers in refining existing policies and key factors. This could contribute to significant understanding of the factors influencing the adoption of CBDC, like UPI's integration (UPII) into an existing digital payment system, which can substantially influence users to adopt CBDC, as here familiarity with existing payment systems plays a crucial role, which adds a shed to the existing theoretical models. Overall, this study contributes to the fin-tech domain and helps in getting profound insights for understanding the user's intention regarding CBDC adoption in a more contextual and pertinent theoretical manner.

6.2 Practical Implications

The section on practical implications includes an analysis of the findings for various stakeholders in the digital finance and fintech sectors, particularly regarding the adoption of CBDC by users. The study offers practical insights for policymakers, related stakeholders, and regulatory bodies, as they could formulate a policy framework by analysing the strong mediating role of the likelihood of adoption (LOA), as findings has effect of (β=0.665, t=18.256, p< 0.001). This analysis indicates that individuals with a strong likelihood to adopt CBDC are also more likely to use it, so policymakers, including the RBI and the government, must assess all factors that may influence LOA.

From the findings of this study, it was observed that digital financial literacy (DFL) has the strongest impact on the LOA having values (β=0.275, t=3.930, p< 0.001), which indicates enhancing users capabilities and cognitive aspect would be critical for encouraging adoption of CBDC.

Policymakers must address all those concerns for enhancing users' understanding to use this system. The findings suggest policymakers and stakeholders utilize their funds for financial literacy programs for digital payment systems, including hands-on training. Findings for awareness (AW) suggest that awareness remains as the important determinant as values were (β=0.254, t=5.238, p< 0.001), which is critical in the process of CBDC's adoption. Therefore, the government and RBI must tailor their strategy to enhance digital financial literacy and awareness regarding CBDC by implementing customized, user-friendly campaigns that include training, especially considering the demographics of the Eastern region, which encompasses a significant number of rural areas. This approach can equip users with the necessary digital and financial skills. The values (β=0.240, t=4.011, p< 0.001) indicated a positive impact of UPI integration on LOA and users' intention to use CBDC urges policymakers and stakeholders to provide a design that offers seamless integration of UPI-CBDC, as familiarity with existing digital systems' interfaces could leverage the transactions and results into the enhancement of users along with the upliftment of trust. Similarly, the positive influence of adequate digital infrastructure (ADI) on the likelihood of adoption (LOA) and users' intention to use CBDC (β=0.210, t=3.859, p< 0.001), indicates that infrastructure serves as a catalyst for enhancing CBDC adoption; therefore, stakeholders such as the government, telecom authorities, and NPCI should collaboratively address issues related to seamless network connectivity, internet access, and payment and, especially in impoverished regions.

7. Conclusion

The study signifies that awareness, digital financial literacy, adequate digital infrastructure, and UPI's integration emerged as key factors in significantly influencing likelihood of adoption (LOA), which appeared to be the crucial determinant having the strongest relationship with users' intention to use (ITU). The study has incorporated the UTAUT framework with an extension by adding likelihood of adoption (LOA) into it as a mediating construct, which is empirically validated in the study, and offered a gateway by which behavioural intention was influenced by an external construct that may be subject to an innovative inclusion into existing technology acceptance frameworks.

The role of LOA in this study was to connect all these constructs to the outcome, i.e., users' intention for using CBDC, and by emphasizing their importance, the gap related to behavioural understanding was fulfilled. This reflects the user's intention passing through an interaction of adoption readiness factors, which signifies that the user's intention for using CBDC is determined through a strong likelihood of it rather than the influence of direct factors. The inclusion of institution-centric factors such as UPI's integration leverages adoption, as familiarity and prior experience are strongly working for individuals. Likewise, having adequate digital infrastructure, especially in developing regions, contributes to the need for supportive technology for maximizing adoption of CBDC.

The adoption of CBDC is not only linked with the transition of technology but also with the perception of individuals as the technology is deemed to be introduced in the upcoming time, and the policymakers or related stakeholders have to address the hurdles specifically for the demography like Bihar, Odisha, and West Bengal, where financial inclusion and digital disparities are still matters of concern, and the findings of this study speak for the same, as tackling these factors will result in enhancement of adoption and usage of CBDC. Overall, the findings of this study would be beneficial for similar socio-economic environments; the contributions and valuable insights provided could lead to various research initiatives gaining mainstream attention, both conceptually and empirically.

8. Limitations and Future Directions

Even though the study contributes valuable and unique insights for CBDC adoption in an area specific to certain limitations, they need to be acknowledged. First, the study substantially focused on the target population of Eastern India, which is likely to limit their generalizability for other demographic groups or regions prior to further empirical validation. Therefore, the results of this study could be seen as context-specific rather than universally applicable, as in a developing region of eastern India, the concern of digital infrastructure and seamless integration still matters. Second, the study has utilized cross-sectional data, which restricts the competency to evaluate the evolving scenario of CBDC among the users and their perception; longitudinal studies may be conducted in the future to observe the pattern of change in response among users over the period. The use of a cross-sectional design only identifies relationships rather than defining causal inferences, and longitudinal designs could provide answers to how these relationships evolve over time, especially when CBDC progresses. Third, limited experience among individuals regarding CBDC may lead to a lack of proper information and understanding among respondents, especially since India is one of the countries in the pilot phase, which could change with implementation. Fourth, this study relies on survey-based self-reported data, which may bring response bias and may not reflect the actual perception of individuals. These issues might lead to an incorrect estimation of the established relationships regarding users' intention to use CBDC. Additionally, the study relies on convenience and snowball sampling, which raises the chances of selection bias, which results in an imperfect reflection of the overall demography of the Eastern region. Finally, while the deployment of the UTAUT model provided a foundation for analysis in this study, the basic variables of this framework were not included; instead, only the variables upon which the study is based were indicated. Moreover, this study also limits itself from applying moderators such as age, gender, etc., as these are incorporated in the UTAUT framework.

Future studies may think of including some aspects that were left over in this study. First, incorporation of additional variables like government role, trust, perceived risk, etc. may help in the enhancement of the descriptive strength of the conceptual framework. Second, inclusion of moderators like age, income level, and occupation will help in framing the interface of the payment system accordingly. Third, after the deployment of CBDC, longitudinal studies for individuals must be conducted to gather before-and-after effects; additionally, probability-based sampling, such as stratified random sampling, must be employed to ensure more participation with less bias. Fourth, increasing

the sample size by including more Indian states for comparative analysis may provide a clearer understanding of adoption and users' intentions regarding the use of CBDC. Finally, as LOA was the key construct in this study through which all the other constructs directly and indirectly supported the relationship for the outcome, i.e., the user's intention to use CBDC (ITU), exploring LOA in-depth in future studies will enhance the theoretical base, especially for CBDC, and will also open pathways for similar studies.

References

Abdallah, W., Tfaily, F., Harraf, A. (2024). The impact of digital financial literacy on financial behavior: customers' perspective. *Competitiveness Review an International Business Journal Incorporating Journal of Global Competitiveness*, 35(2), 347–370. https://doi.org/10.1108/cr-11-2023-0297

Acheampong, P., Zhiwen, L., Antwi, H.A., Otoo, A.A.A., Mensah, W.G., Sarpong, P.B. (2017). Hybridizing an extended technology readiness index with technology acceptance model (TAM) to predict e-payment adoption in Ghana. *American Journal of Multidisciplinary Research*, *5*(2), 172-184.

Adikoeswanto, D., Eliyana, A., Syamsudin, N., Budiyanto, S., Arief, Z., Anwar, A. (2022). The mediation role of adoption readiness on perceived anxiety and attitude toward using database management system at correctional institutions. *Heliyon*, 8(8). https://doi.org/10.1016/j.heliyon.2022.e10027

Affandi, Y., Ridhwan, M.M., Trinugroho, I., Hermawan Adiwibowo, D. (2024). Digital adoption, business performance, and financial literacy in ultra-micro, micro, and small enterprises in Indonesia. *Research in International Business and Finance*, 70Part B, 102376. https://doi.org/10.1016/j.ribaf.2024.102376

Alliance for Financial Inclusion. (2021). DIGITAL FINANCIAL LITERACY GUIDELINE NOTE 2. https://www.afi-global.org/wp-content/uploads/2024/10/AFI_Guideline45_Digi_Finance_Literacy_aw5.pdf

Andolfatto, D. (2021). Assessing the Impact of Central Bank Digital Currency on Private Banks. *The Economic Journal*, 131(634), 525–540. https://doi.org/10.1093/ej/ueaa073

Arauz, A., Garratt, R., Ramos F., D.F. (2021). Dinero Electrónico: The rise and fall of Ecuador's central bank digital currency. *Latin American Journal of Central Banking*, 2(2), 100030. https://doi.org/10.1016/j.latcb.2021.100030

Balvers, R.J., McDonald, B. (2021). Designing a global digital currency. *Journal of International Money and Finance,* 111, 102317. https://doi.org/10.1016/j.jimonfin.2020.102317

Bandura, A. (1991). Social cognitive theory of self-regulation. *Organizational Behavior and Human Decision Processes*, 50(2), 248–287. https://doi.org/10.1016/0749-5978(91)90022-L

Becks, E., Zdankin, P., Matkovic, V., Weis, T. (2023). Complexity of Smart Home Setups: A Qualitative User Study on Smart Home Assistance and Implications on Technical Requirements. *Technologies*, 11(1), 9. https://doi.org/10.3390/technologies11010009

BIS. (2020). Central bank digital currencies: foundational principles and core features report no. 1 in a series of collaborations from a group of central banks. https://www.bis.org/publ/othp33.pdf

BIS. (2021). Central bank digital currencies: user needs and adoption Bank of Canada European Central Bank Bank of Japan Sveriges Riksbank Swiss National Bank Bank of England Board of Governors Federal Reserve System Bank for International Settlements. https://www.bis.org/publ/othp42_user_needs.pdf

Brick, J.M., Williams, D. (2013). Explaining Rising Nonresponse Rates in Cross-Sectional Surveys. *Annals of the American Academy of Political and Social Science*, 645(1), 36–59. https://doi.org/10.1177/0002716212456834

Choithani, T., Chowdhury, A., Patel, S., Patel, P., Patel, D., Shah, M. (2024). A Comprehensive Study of Artificial Intelligence and Cybersecurity on Bitcoin, Crypto Currency and Banking System. *Annals of Data Science*, 11(1), 103–135. https://doi.org/10.1007/s40745-022-00433-5

Chua, B.L., Ayalew, Z.A., Kim, S., Han, H., Ha, H. (2025). Consumer multifaceted trust of central bank digital currency (CBDC) payment in travel and tourism. *Technological Forecasting and Social Change*, 217, 124166. https://doi.org/10.1016/j.techfore.2025.124166

Cornelli, G., Frost, J., Gambacorta, L., Sinha, S., Townsend, R.M. (2024). The organisation of digital payments in India-lessons from the Unified Payments Interface (UPI). In *SUERF: The European Money and Finance Forum, SUERF Policy Note*, 355.https://www.bis.org/publ/bppdf/bispap152_e_rh.pdf

Dash, B., Ansari, M.F., Sharma, P., siddha, S.S. (2022). Future Ready Banking with Smart Contracts - CBDC and Impact on the Indian Economy. *International Journal of Network Security & Its Applications*, 14(5), 39–49. https://doi.org/10.5121/ijnsa.2022.14504

Dash, G., Paul, J. (2021). CB-SEM vs PLS-SEM methods for research in social sciences and technology forecasting. *Technological Forecasting and Social Change*, 173, 121092. https://doi.org/10.1016/j.techfore.2021.121092

Davis, F.D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly: Management Information Systems*, 13(3), 319–340. https://doi.org/10.2307/249008

Desai, R. (2024). Analysing consumer switching behaviour and financial antecedents to determine the intention to use central bank digital currency: evidence from the Indian economy. *Asia Pacific Journal of Marketing and Logistics*, 37(7), 2048-2074. https://doi.org/10.1108/APJML-05-2024-0669

Desai, R., Bhatt, K. (2026). Digital finance and personality traits interplay in determining central bank digital currency adoption: extending the technology acceptance perspective. *International Journal of Bank Marketing*, 44(3), 571–594. https://doi.org/10.1108/ijbm-02-2025-0154

Du, Z.Y., Wang, Q. (2024). Digital infrastructure and innovation: Digital divide or digital dividend? *Journal of Innovation and Knowledge*, 9(3), 100542. https://doi.org/10.1016/j.jik.2024.100542

Dwivedi, Y.K., Rana, N.P., Jeyaraj, A., Clement, M., Williams, M.D. (2019). Re-examining the Unified Theory of Acceptance and Use of Technology (UTAUT): Towards a Revised Theoretical Model. *Information Systems Frontiers*, 21(3), 719–734. https://doi.org/10.1007/s10796-017-9774-y

Erwanti, N., Prasetyani, H. (2023). Investigating Intention to Use Central Bank Digital Currency in Indonesia. *Journal of Information Systems and Informatics*, 5(4), 1461–1471. https://doi.org/10.51519/journalisi.v5i4.598

Fahad, Shahid, M. (2022). Exploring the determinants of adoption of Unified Payment Interface (UPI) in India: A study based on diffusion of innovation theory. *Digital Business*, 2(2), 100040. https://doi.org/10.1016/j.digbus.2022.100040

Fornell, C., Larcker, D.F. (1981). Structural Equation Models with Unobservable Variables and Measurement Error: Algebra and Statistics. *Journal of Marketing Research*, 18(3), 382-388. https://doi.org/10.1177/002224378101800313

Foster, B., Sukono, Johansyah, M.D. (2022). Analysis of the effect of financial literacy, practicality and consumer lifestyle on the use of chip-based electronic money using sem. *Sustainability*, 14(1), 32. https://doi.org/10.3390/su14010032

Frost, J., Wilkens, P.K., Kosse, A., Shreeti, V., Velasquez, C. (2024). Fast payments: Design and Adoption. *BIS Quarterly Review*, *31*.https://www.bis.org/publ/qtrpdf/r_qt2403c.pdf

Gupta, I., Naulakha, T.S. (2020). The Cryptocurrency Judgement: Changing Contours of Virtual Currency Regulation in India. *International Journal of Legal Science and Innovation*, 2(2). https://ijlsi.com/9-the-cryptocurrency-judgement-changing-contours-of-virtual-currency-regulation-in-india/

Gupta, M., Taneja, S., Sharma, V., Singh, A., Rupeika-Apoga, R., Jangir, K. (2023). Does Previous Experience with the Unified Payments Interface (UPI) Affect the Usage of Central Bank Digital Currency (CBDC)? *Journal of Risk and Financial Management*, 16(6), 286. https://doi.org/10.3390/jrfm16060286

Gupta, S., Pandey, D.K., El Ammari, A., Sahu, G.P. (2023). Do Perceived Risks and Benefits Impact trust and Willingness to adopt CBDCs? *Research in International Business and Finance*, 66, 101993. https://doi.org/10.1016/j.ribaf.2023.101993

Hair, J. F., Risher, J. J., Sarstedt, M., Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European business review*, 31(1), 2-24.https://doi.org/10.1108/EBR-11-2018-0203

Hair, J., Hollingsworth, C.L., Randolph, A.B., Chong, A.Y.L. (2017). An Updated and Expanded Assessment of PLS-SEM in Information Systems Research. *Industrial Management and Data Systems*, 117(3), 442–458. https://doi.org/10.1108/IMDS-04-2016-0130

Hair, J.F., Howard, M.C., Nitzl, C. (2020). Assessing Measurement Model Quality in PLS-SEM using confirmatory composite analysis. *Journal of Business Research*, 109, 101–110. https://doi.org/10.1016/j.jbusres.2019.11.069

Hair, J.F., Hult, G.T.M., Ringle, C.M., Sarstedt, M., Danks, N.P., Ray, S. (2021). An Introduction to Structural Equation Modeling, 1–29. https://doi.org/10.1007/978-3-030-80519-7_1

Hair, J.F., Ringle, C.M., Sarstedt, M. (2013). Partial Least Squares Structural Equation Modeling: Rigorous Applications, Better Results and Higher Acceptance. *In Long Range Planning, Elsevier Ltd*, 46(1–2), 1–12. https://doi.org/10.1016/j.lrp.2013.01.001

Hall, B.H., Khan, B. (2003). Adoption of New Technology. *National Bureau of Economic Research Working Paper 9730*. https://doi.org/10.3386/w9730

Haque, M.A., Shoaib, M. (2023). e₹—the digital currency in India: Challenges and prospects. *Bench Council Transactions on Benchmarks, Standards and Evaluations*, 3(1), 100107. https://doi.org/10.1016/j.tbench.2023.100107

Henseler, J., Ringle, C.M., Sarstedt, M. (2015). A New Criterion for Assessing Discriminant Validity in Variance-based Structural Equation Modeling. Journal of the Academy of Marketing Science, 43(1), 115–135. https://doi.org/10.1007/s11747-014-0403-8

Jasimuddin, S.M., Mishra, N., A. Saif Almuraqab, N. (2017). Modelling the Factors that Influence the Acceptance of Digital Technologies in E-Government Services in the UAE: a PLS-SEM Approach. *Production Planning and Control*, 28(16), 1307–1317. https://doi.org/10.1080/09537287.2017.1375144

Kakinaka, S., Umeno, K. (2022). Cryptocurrency Market Efficiency in short- and Long-Term Horizons during COVID-19: An Asymmetric Multifractal Analysis Approach. Finance Research Letters, 46, 102319. https://doi.org/10.1016/j.frl.2021.102319

Kamila, A., Shinde, A. (2024). CBDC can complement UPI well. https://www.ies.gov.in/pdfs/CBDC-complements-UPI-well.pdf

Kass-Hanna, J., Lyons, A.C., Liu, F. (2022). Building Financial Resilience through Financial and Digital Literacy in South Asia and Sub-Saharan Africa. *Emerging Markets Review*, 51, 100846. https://doi.org/10.1016/j.ememar.2021.100846

Kaur, H., Kaur, R., Mago, M., Singh, M., Mehta, K. (2024). Exploring Factors Affecting Central Bank Digital Currency Adoption: A Perspective from Generation Z. *Metamorphosis: A Journal of Management Research*, 23(2), 126–141. https://doi.org/10.1177/09726225241286932

Keshav, A., Sinha, R.A. (2024). Digital Money in the Indian Context: An In-depth Exploration of its Evolution, Implications, and Future Prospects within the Framework of Central Bank Digital Currency. In *Journal of Electrical Systems*, 20(1), 350-361. https://doi.org/10.52783/jes.686

Khan, W.A., Abideen, Z.U. (2023). Effects of behavioural intention on usage behaviour of Digital Wallet: the mediating Role of Perceived Risk and Moderating role of Perceived Service Quality and Perceived Trust. *Future Business Journal*, 9(1). https://doi.org/10.1186/s43093-023-00242-z

Kock, N., Hadaya, P. (2018). Minimum Sample Size Estimation in PLS-SEM: The Inverse Square Root and Gamma-Exponential Methods. *Information Systems Journal*, 28(1), 227–261. https://doi.org/10.1111/isj.12131

Koparan, A. (2025). Central Bank Digital Currencies: A Review of Global Trends in Adoption, Financial Inclusion, and the Role of Country Characteristics. *Investment Management and Financial Innovations*, 22(1), 107–121. https://doi.org/10.21511/imfi.22(1).2025.09

Kosse, A., Mattei, I. (2022). Gaining momentum–Results of the 2021 BIS Survey on Central Bank Digital currencies. *BIS papers*. https://ideas.repec.org/b/bis/bisbps/125.html

Kumar, M., Singh, J.B., Sharma, S.K. (2025). Evolving "affordances" and "constraints" in Mobile Payment use: a Study of Indian Micro-Enterprises' UPI adoption process. *Journal of Enterprise Information Management*, 38(2), 660–678. https://doi.org/10.1108/JEIM-09-2023-0455

Kumar, P., Pillai, R., Kumar, N., Tabash, M.I. (2023). The interplay of Skills, Digital Financial Literacy, Capability, and Autonomy in Financial Decision Making and Well-Being. *Borsa Istanbul Review*, 23(1), 169–183. https://doi.org/10.1016/j.bir.2022.09.012

Leong, L.Y., Hew, T.S., Ooi, K.B., Lee, V.H., Hew, J.J. (2019). A Hybrid SEM-Neural Network Analysis of Social Media Addiction. *Expert Systems with Applications*, 133, 296–316. https://doi.org/10.1016/j.eswa.2019.05.024

Leong, L.Y., Hew, T.S., Ooi, K.B., Wei, J. (2020). Predicting Mobile Wallet Resistance: A two-Staged Structural Equation Modeling-Artificial Neural Network Approach. *International Journal of Information Management*, 51, 102047. https://doi.org/10.1016/j.ijinfomgt.2019.102047

Li, J., Li, Q., Wei, X. (2020). Financial Literacy, Household Portfolio Choice and Investment Return. *Pacific-Basin Finance Journal*, 62, 101370.https://doi.org/10.1016/j.pacfin.2020.101370

Liu, X., Wang, Q., Wu, G., Zhang, C. (2024). Determinants of Individuals' Intentions to use Central Bank Digital Currency: Evidence from China. *Technology Analysis and Strategic Management*, 36(9), 2213–2227. https://doi.org/10.1080/09537325.2022.2131517

Long, T.Q., Morgan, P.J., Yoshino, N. (2023). Financial Literacy, Behavioral Traits, and Epayment Adoption and usage in Japan. *Financial Innovation*, 9(1), 101. https://doi.org/10.1186/s40854-023-00504-3

Lusardi, A., Mitchell, O.S. (2013). (2014) The Economic Importance of Financial Literacy: Theory and Evidence. *Journal of economic literature*, 52(1), 5-44. http://www.nber.org/papers/w18952

Ma, C., Wu, J., Sun, H., Zhou, X., Sun, X. (2023). Enhancing user Experience in Digital Payments: A Hybrid Approach using SEM and Neural Networks. *Finance Research Letters*, 58, 104376. https://doi.org/10.1016/j.frl.2023.104376

Ma, W. (2023). Frontiers in Business, Economics and Management An Introduction to The Impact of India's Use of Central Bank Digital Currency on the International Financial System, *Frontiers in Business Economics and Management*, 7(1), 218–220. https://doi.org/10.54097/fbem.v7i1.4171

Maleepumpun, K. (2023). Factors Affecting the Acceptance of CBDCs in the Tourism Industry: A Structural Equation Modeling Approach. *Service, Leisure, Sport, Tourism & Education*, 1(3). https://so09.tci-thaijo.org/index.php/BTSMM/article/view/1171

Mertzanis, C., Ahmed, M.S., Faisal, R., Al Suwaidi, R.A. (2025). Does Financial Literacy Drive Digital Currency Innovation? Cross-Country Evidence on CBDC adoption. *Borsa Istanbul Review*, 25, 109–118. https://doi.org/10.1016/j.bir.2025.08.006

Mombeuil, C. (2020). An Exploratory Investigation of Factors Affecting and Best Predicting the Renewed Adoption of Mobile Wallets. *Journal of Retailing and Consumer Services*, 55, 102127. https://doi.org/10.1016/j.jretconser.2020.102127

Morales-Resendiz, R., Ponce, J., Picardo, P., Velasco, A., Chen, B., Sanz, L., Guiborg, G., Segendorff, B., Vasquez, J.L., Arroyo, J., Aguirre, I., Haynes, N., Panton, N., Griffiths, M., Pieterz, C., Hodge, A. (2021). Implementing

a retail CBDC: Lessons learned and key insights. *Latin American Journal of Central Banking*, 2(1), 100022. https://doi.org/10.1016/j.latcb.2021.100022

Morgan, P.J., Huang Bihong, Trinh .Q Long. (2019). The Need to Promote Digital Financial Literacy for the Digital Age. *In Asian Development Bank Institute*. https://www.adb.org/sites/default/files/publication/503706/adbi-realizing-education-all-digital-age.pdf#page=56

Morgan, P.J., Long, T.Q. (2020). Financial Literacy, Financial Inclusion, and Savings Behavior in Laos. *Journal of Asian Economics*, 68, 101197. https://doi.org/10.1016/j.asieco.2020.101197

Mukhopadhyay, S., Upadhyay, P. (2022). Institutional Intervention in Technology Innovation: the struggle to increase Mobile Payment Adoption. *Digital Policy, Regulation and Governance*, 24(1), 74–92. https://doi.org/10.1108/DPRG-01-2021-0002

Nakamoto, S. (2008). Bitcoin: A Peer-to-Peer Electronic Cash System. https://assets.pubpub.org/d8wct41f/31611263538139.pdf

NPCI. (2016). Unified Payments Interface (UPI). https://www.npci.org.in/what-we-do/upi/product-overview

NPCI. (2023). Digital-Rupee-CBDC-and-UPI-Interoperability.

Ogunmola, G.A., Das, U. (2024). Analyzing Consumer Perceptions and Adoption Intentions of central Bank Digital currency: a case of the Digital Rupee. *Digital Policy, Regulation and Governance*, 26(4), 450–471. https://doi.org/10.1108/DPRG-09-2023-0136

Ozili, P.K. (2022). Can Central Bank Digital Currency Increase financial Inclusion? Arguments for and against. https://mpra.ub.uni-muenchen.de/110786/

Ozturkcan, S., Senel, K., Ozdinc, M. (2022). Framing the Central Bank Digital Currency (CBDC) revolution. *Technology Analysis and Strategic Management*. 37(4), 462–479. https://doi.org/10.1080/09537325.2022.2099261

Palanisamy, M., Vincent, M.T.P., Hossain, M.B. (2025). Financial Literacy and Behavioral Intention to use Central Banks' Digital Currency: Moderating role of trust. Journal of Risk and Financial Management, 18(3), 165. https://doi.org/10.3390/jrfm18030165

Phone pe. (2024). The Beat of Progess. Phone Pe. https://www.phonepe.com/pulse/explore/transaction/2024/4/

Pomery, E.A., Gibbons, F.X., Reis-Bergan, M., Gerrard, M. (2009). From willingness to Intention: Experience Moderates the Shift from Reactive to Reasoned Behavior. *Personality and Social Psychology Bulletin*, 35(7), 894–908. https://doi.org/10.1177/0146167209335166

Rahayu, R., Ali, S., Aulia, A., Hidayah, R. (2022). The Current Digital Financial Literacy and Financial Behavior in Indonesian Millennial Generation. *Journal of Accounting and Investment*, 23(1), 78–94. https://doi.org/10.18196/jai.v23i1.13205

Ravi kumar, T., Suresha, B., Prakash, N., Vazirani, K., Krishna, T.A. (2022). Digital Financial Literacy among Adults in India: Measurement and Validation. *Cogent Economics and Finance*, 10(1). https://doi.org/10.1080/23322039.2022.2132631

Razi-ur-Rahim, M., Rabbani, M.R., Uddin, F., Shaikh, Z.H. (2024). Adoption of UPI among Indian Users: Using extended Meta-UTAUT Model. *Digital Business*, 4(2), 100093. https://doi.org/10.1016/j.digbus.2024.100093

RBI. (2022). Concept Note on Central Bank Digital Currency FinTech Department Reserve Bank of India.https://rbidocs.rbi.org.in/rdocs/PublicationReport/Pdfs/CONCEPTNOTEACB531172E0B4DFC9A6E506C2C24FFB6.PDF

RBI. (2024). The President of India Report on Audit of Financial Statements of the Reserve Bank of India.https://rbidocs.rbi.org.in/rdocs/AnnualReport/PDFs/12THERESERVEBANKACCOUNTS87AC12CB35D24C80956B35B679DC809C.PDF

Ringle, C.M., Sarstedt, M., Sinkovics, N., Sinkovics, R.R. (2023). A Perspective on using Partial Least Squares Structural Equation Modelling in Data Articles. *Data in Brief*, 48, 109074. https://doi.org/10.1016/j.dib.2023.109074

Rossi, S. (2025). Central Bank Digital Currencies: Much ado About Nothing? *Review of Political Economy*, 1-6. https://doi.org/10.1080/09538259.2024.2445752

Saiedi, E., Broström, A., Ruiz, F. (2021). Global Drivers of Cryptocurrency Infrastructure Adoption. *Small Business Economics*, 57(1), 353–406. https://doi.org/10.1007/s11187-019-00309-8

Saroy, R., Awasthy, S., Singh, N.K., Adki, S.M., Dhal, S. (2022). The Impact of Covid-19 on Digital Payment Habits of Indian Households. *Buletin Ekonomi Moneter Dan Perbankan*, 25, 19–42. https://doi.org/10.21098/bemp.v25i0.1823

Saroy, R., Jain, P., Awasthy, S., Dhal, S.C. (2023). Impact of Digital Payment Adoption on Indian Banking Sector Efficiency. Journal of Banking and Financial Technology, 7(1–2), 1–13. https://doi.org/10.1007/s42786-023-00047-2

Sestino, A., Prete, M. I., Piper, L., Guido, G. (2020). Internet of Things and Big Data as enablers for business Digitalization Strategies. *Technovation*, 98, 102173. https://doi.org/10.1016/j.technovation.2020.102173

Shahzad, F., Xiu, G. Y., Wang, J., Shahbaz, M. (2018). An Empirical Investigation on the Adoption of Cryptocurrencies among the People of Mainland China. *Technology in Society*, 55, 33–40. https://doi.org/10.1016/j.techsoc.2018.05.006

Shahzad, M. F., Xu, S., Lim, W. M., Hasnain, M.F., Nusrat, S. (2024). Cryptocurrency Awareness, Acceptance, and Adoption: the Role of Trust as a Cornerstone. *Humanities and Social Sciences Communications*, 11(1). https://doi.org/10.1057/s41599-023-02528-7

Sharma, I., Mishra, S. (2020). Modeling Consumers' likelihood to adopt Autonomous Vehicles based on their Peer Network. *Transportation Research Part D: Transport and Environment*, 87, 102509. https://doi.org/10.1016/j.trd.2020.102509

Sharma, V., Jangir, K., Gupta, M., Rupeika-Apoga, R. (2024). Does Service Quality matter in FinTech payment services? An Integrated SERVQUAL and TAM approach. International Journal of Information Management Data Insights, 4(2), 100252. https://doi.org/10.1016/j.jjimei.2024.100252

Shukla, V., Misra, K., Chaturvedi, A. (2022). Article Journey of Cryptocurrency in India In View of Financial Budget 2022-23. *arXiv (Cornell University).* https://doi.org/https://doi.org/10.48550/arXiv.2203.12606

Sindakis, S., Showkat, G. (2024). The Digital Revolution in India: bridging the Gap in Rural Technology Adoption. Journal of Innovation and Entrepreneurship, 13(1). https://doi.org/10.1186/s13731-024-00380-w

Singh, K.P., Kumar, P. (2025). Factors Influencing E-Pharmacy Adoption in India: A study of User Experiences through Interpretative Phenomenological Analysis. Exploratory Research in Clinical and Social Pharmacy, 17, 100550. https://doi.org/10.1016/j.rcsop.2024.100550

Singh, V., Yadav, M., Gupta, A. (2026). CBDC in a privacy sensitive world: extending UTAUT with digital financial literacy and anonymity insight. *Journal of Financial Services Marketing*, 31(1). https://doi.org/10.1057/s41264-025-00338-3

Tronnier, F., Harborth, D., Hamm, P. (2022). Investigating Privacy Concerns and Trust in the Digital Euro in Germany. *Electronic Commerce Research and Applications*, 53, 101158. https://doi.org/10.1016/j.elerap.2022.101158

Tronnier, F., Recker, M., Hamm, P., Tronnier, F. (2020). Towards Central Bank Digital Currency-A Systematic Literature Towards Central Bank Digital Currency-A Systematic Literature Review. *PACIS 2020 Proceedings*. 131. https://aisel.aisnet.org/pacis2020/131

Venkatesh, V., Morris, M.G., Davis, G.B., Davis, F.D. (2003). User Acceptance of Information Technology: toward a Unified view1. *MIS Quarterly*, 27(3), 425–478. https://doi.org/10.2307/30036540

Wu, B., An, X., Wang, C., Shin, H.Y. (2022). Extending UTAUT with National Identity and Fairness to understand user adoption of DCEP in China. *Scientific Reports*, 12(1), 6856. https://doi.org/10.1038/s41598-022-10927-0

Wu, J., Liu, X., Zhang, C. (2024). Unveiling the Influencing Mechanism Underlying Users' Adoption and recommend Intentions of Central Bank Digital Currency: A Behavioral Reasoning Theory Perspective. *Journal of Retailing and Consumer Services*, 81, 104050. https://doi.org/10.1016/j.jretconser.2024.104050

Xia, H., Gao, Y., Zhang, J.Z. (2023). Understanding the adoption Context of China's Digital Currency Electronic Payment. *Financial Innovation*, 9(1), 63. https://doi.org/10.1186/s40854-023-00467-5

Author Contribution Statement

August Keshav: Writing – Original Draft, Visualization, Methodology, Investigation, Conceptualization. Ashish Ranjan Sinha: Review & Editing, Supervision, Formal analysis, Data curation. Both authors have read and agreed to the published version of the manuscript.

Does this article screen for similarity?

Yes

Conflict of Interest

The authors have no conflicts of interest to declare. There is also no financial interest to report. The author certifies that the submission is original work and is not under review at any other publication.

About the License

Cite this Article

August Keshav, Ashish Ranjan Sinha, Determinants of Users' intention to Adopt Central Bank Digital Currency in India: An Extended UTAUT Model with Mediating Role of Adoption Likelihood, Asian Journal of Interdisciplinary Research, 9(2), (2026) 84-107. https://doi.org/10.54392ajir2625