

Digital Rupee Adoption: Blockchain's Role in India's Central Bank Digital Currency

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Abstract

India's Central Bank Digital Currency (CBDC), the digital rupee (₹), was introduced to support the transformation of the country's digital payment and financial ecosystem; however, its adoption remains relatively limited. This study examines the factors influencing technology valuation and adoption intention toward ₹ in India. Specifically, the study investigates the effects of competition from other payment options, digital illiteracy, financial inclusion, economic growth, payment diversity, scalability, and secure and centralized systems on technology valuation, and further examines the effect of technology valuation on adoption intention. Data were collected from 252 respondents using a fully structured questionnaire, representing a 63% response rate. The proposed model was empirically assessed using Partial Least Squares Structural Equation Modeling (PLS-SEM). The findings indicate that competition from other payment options, digital illiteracy, financial inclusion, economic growth, payment diversity, and secure and centralized systems have statistically significant positive effects on technology valuation. In contrast, scalability has a positive but statistically non-significant relationship with technology valuation. Technology valuation has a strong and statistically significant positive effect on adoption intention ($\beta = 0.794$, $p < 0.001$). The structural model explains 89.1% of the variance in technology valuation and 63.1% of the variance in adoption intention. Overall, the findings demonstrate that the adoption of ₹ is influenced by a combination of economic, financial, competitive, payment-related, and technological considerations. The study contributes to the emerging literature on CBDC adoption by highlighting the importance of technology valuation as a key mechanism through which characteristics of the digital-currency ecosystem influence users' intention to adopt ₹.

Keywords: blockchain; digital currency; technology valuation; adoption intention; payment diversity; financial inclusion

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1. Introduction

The e-rupee, India's Central Bank Digital Currency (CBDC), is designed as a digital equivalent of physical cash and leverages distributed ledger technology to facilitate secure and efficient transactions. Its development highlights the growing acceptance and integration of the e-rupee into the financial ecosystem and underscores India's commitment to digital payment innovation. A CBDC is a centrally managed and controlled digital currency that can provide an efficient means of conducting transactions for citizens and businesses. CBDC is central bank-issued digital money, or a "digital banknote," that can be programmed and transmitted on a peer-to-peer basis using blockchain technology (Meier & Kondova, 2024). The People's Bank of China, the country's central bank, has already conducted trials of its digital retail currency (Sethaput & Innet, 2023). Previous research has investigated the advantages and risks of CBDCs, as well as their social integration and learning

implications, through expert discussions and conference observations (Horváth, 2023). CBDCs and technology-based financial services have the potential to contribute to financial stability; however, cryptocurrencies such as Bitcoin may pose risks to economic stability that can be mitigated through appropriate regulation (Ozili, 2023).

The Reserve Bank of India (RBI) defines Central Bank Digital Currency, commonly referred to as the "Digital Rupee" or "₹," as a form of official legal tender issued by a central bank in digital form. It is equivalent to sovereign currency and can be exchanged for existing currency at par. The ₹ represents a direct claim on the central bank. The supply and value of a CBDC are determined within the broader monetary and economic framework of the issuing country, including its banking system and overall economic conditions.

Furthermore, the ₹ initiative provides an overview of India's digital currency programme, including its objectives, features, and potential benefits for the Indian economy. It emphasizes the importance of developing a secure and efficient digital currency infrastructure to support India's rapidly expanding digital economy and facilitate seamless digital transactions across the country. Understanding the benefits and limitations of implementing blockchain technology for the ₹ is therefore essential for assessing its potential impact on India's digital currency ecosystem. Blockchain-based CBDCs involve the validation of transactions through an immutable ledger, which may be decentralized or centrally managed depending on the requirements of the central bank. CBDCs could also serve as an instrument for peer-to-peer offline transactions in situations where mobile or internet connectivity is unavailable (Meena Kumari, 2021). Central banks can utilize distributed ledger technologies to support CBDC systems (Guo et al., 2025). The emergence of digital currencies also necessitates reconsideration of conventional regulatory approaches for protecting digital currency information, particularly by examining the gap between the actual operation and the design of the ₹ digital currency (Cheng, 2023).

Promoting CBDC adoption in India presents a significant challenge given the country's large population. According to The Economic Times, Indian banks contributed to the expansion of the digital rupee by disbursing employee benefits through the digital rupee, thereby supporting the Reserve Bank of India's efforts to achieve its adoption targets. CBDCs can potentially be used by financial institutions, consumers, and businesses to facilitate savings and payment activities. The form and function of money have evolved over time in response to changes in economic conditions and payment systems. Globally, transaction patterns have rapidly shifted from offline to online digital payment models, accompanied by increasing interest in the development and implementation of Central Bank Digital Currencies (CBDCs) in various countries (Cheng, 2023).

Beyond addressing financial inefficiencies, digital currencies can influence political and economic power dynamics while providing new conceptual frameworks for understanding money and financial systems (Marple, 2021). Existing accounting standards may also need to be updated to incorporate digital currencies and reduce inconsistencies in international accounting systems (Alsalmi et al., 2023). Although digital currencies may facilitate transactions more efficiently, they can also contribute to reductions in bank deposits, increases in bank funding costs, and potential reductions in investment (Keister & Sanches, 2023). In the Indian context, the adoption of digital currency, exemplified by initiatives such as the ₹, has the potential to transform the country's financial landscape. Digital currency can provide greater convenience and accessibility while potentially addressing longstanding challenges in the financial and payment systems. Previous research has identified barriers to CBDC adoption and proposed potential measures for addressing these challenges (Ozili, 2023). Disruptive technologies can also contribute to the development of fraud-prevention strategies at both the corporate and national levels. CBDCs can function as digital forms of sovereign fiat money and are distinct from decentralized cryptocurrencies (Ogunode & Dada, 2022).

This study examines some of the current approaches used in practice to evaluate and assess these emerging technologies. The objective is to explore and evaluate their implications, challenges, and practical applications in the context of fraud detection and digital financial systems. In February 2022, Finance Minister Nirmala Sitharaman announced that the Reserve Bank of India would introduce a CBDC, or digital rupee (₹), during the fiscal year 2022–2023. In late 2022, the RBI initiated pilot programmes for both retail CBDC, intended for

use by the general public, and wholesale CBDC, intended primarily for interbank transactions. The introduction of the digital rupee represents an important development in India's broader digital transformation. The e₹ has the potential to facilitate corporate transactions while contributing to the security, efficiency, and resilience of the country's payment infrastructure.

The Digital Rupee, or e₹, is India's Central Bank Digital Currency (CBDC). It represents the digital equivalent of India's physical currency, the Indian Rupee (₹), and is issued in digital form by the Reserve Bank of India (RBI) [<https://www.rbi.org.in>]. India has progressed with its CBDC pilot programme, and the digital rupee has the potential to support future payment systems for both domestic and international transactions. A CBDC constructed on an open and autonomous system could enable the full potential of distributed ledger technology (DLT); however, such a system could also be significantly more disruptive to the existing financial system and would therefore require additional technological capabilities and institutional capacity from the central bank (Guo et al., 2025). The implementation of CBDCs can facilitate transactions, promote financial inclusion, and support the expansion of the digital economy, thereby contributing to their successful adoption (Sun & Li, 2024).

Company culture renewal, organizational restructuring, and strategic renewal have also been examined in relation to business model innovation and organizational performance through digital transformation (van Tonder et al., 2023). In addition, CBDCs can function as digital forms of sovereign fiat money rather than decentralized cryptocurrencies (Ogunode & Dada, 2022). The study by Zhang et al. (2020) indicates that many industries are increasingly focusing on modern digital currencies and blockchain-based systems for monetary transfers. The authors argue that conventional models of physical money and payment systems may face increasing limitations in the future. They further suggest that central banks could adopt digital currencies and blockchain-based technologies alongside online payment strategies to strengthen domestic financial stability and payment systems (Zhang et al., 2020). Digital currencies can utilize blockchain technology to facilitate secure and efficient value transfers, support online payments, and promote financial inclusion among individuals who have limited access to traditional banking services.

The key distinctions between cryptocurrencies and CBDCs relate to their governance, accessibility, and underlying blockchain networks. CBDCs are issued and governed by central banks and generally operate through centrally controlled or permissioned blockchain or distributed ledger networks. Access to these networks may be restricted to authorized financial institutions and other designated participants. Cryptocurrencies, in contrast, generally operate on decentralized, open, and permissionless blockchain networks that are accessible to the public. While some cryptocurrencies provide users with a high degree of pseudonymity, CBDCs are designed to operate within a regulated financial system that emphasizes accountability, transparency, and compliance.

Based on the review of the existing literature, the following research questions arise:

- What is the need for and potential of the CBDC e₹ (Digital Rupee) in India?
- What are the key differences between CBDCs and cryptocurrencies?
- What are the major challenges and opportunities associated with the adoption of CBDCs in India?
- What are the main factors influencing the adoption of the CBDC e₹ (Digital Rupee) in India?

The paper explores users' perceptions and adoption intentions regarding India's digital currency and examines the potential adoption of the CBDC among users. A SWOT analysis is employed to assess the strengths, weaknesses, opportunities, and threats associated with the adoption and implementation of the CBDC in India. The study focuses on highlighting the potential role of blockchain technology in the implementation of digital currency in India. It examines the strengths, opportunities, and challenges associated with the adoption of this disruptive technology for the implementation of the digital rupee. The adoption intention is examined using the Unified Theory of Acceptance and Use of Technology 2 (UTAUT2) developed by Venkatesh et al. (2012), which serves as the theoretical foundation for the present investigation. UTAUT2 is one of the widely used theoretical frameworks for explaining consumers' acceptance and use of new technologies. By incorporating additional consumer-oriented constructs into the original UTAUT model, UTAUT2 is particularly relevant for examining the adoption of emerging financial technologies, including digital

currencies. The study examines the potential and challenges associated with CBDC adoption and seeks to identify the potential integration of CBDCs with blockchain technology (BCT). In this context, the study further explores the advantages of blockchain technology and its potential contribution to the security, efficiency, transparency, and accessibility of digital currency systems.

2. Literature Review and Hypotheses Development

To identify the research gap, this study reviewed the existing literature. Previous research published in international journals, books, and other academic sources was examined to understand the development of research on Central Bank Digital Currency (CBDC), its implementation challenges and opportunities, and the role of blockchain technology in digital currency systems.

2.1. Central Bank Digital Currency (CBDC)

Developing legal digital currencies must occur within an appropriate legal and regulatory framework to avoid new systemic risks arising from technological developments. At the same time, countries need to establish appropriate legal frameworks and explore international cooperation and diversified regulatory mechanisms to ensure the healthy development of digital currencies (Xu & Jin, 2022). Monetary general equilibrium models have also examined the implications of Central Bank Digital Currency (CBDC) for credit supply and financial stability. Such studies suggest that CBDCs may increase the likelihood of bank runs if banks experience substantial withdrawals of cash reserves (Kim et al., 2020). CBDCs are central bank liabilities and have several cash-like characteristics. The literature identifies several motivations and potential benefits associated with issuing CBDCs, including promoting financial inclusion, improving the effectiveness of monetary policy, and facilitating efficient digital payments.

2.2. Challenges of Implementing Central Bank Digital Currency

The virtual nature of digital money creates challenges concerning usability, functionality, and trust in digital forms of money (Koziuk, 2021). Central banks must respond to the rapidly changing landscape of digital transactions and address the technological and institutional challenges of implementing CBDCs (Maslov, 2023). In the Indian context, researchers have examined the challenges of introducing CBDCs, their potential risks, and possible CBDC architectures (Meena Kumari, 2021). Implementing CBDCs involves several technological, institutional, and user-related challenges (Maslov, 2023). Research on the Mexican CBDC suggests that although the proposed system may be viable, several problems and issues must be addressed before it can achieve widespread adoption and use among the population (Flores Gálvez & Mata Hernández, 2023). A multiple-case content analysis identified low trust, cybersecurity concerns, inadequate digital identity infrastructure, and outdated or uncompetitive technologies as key factors associated with CBDC implementation difficulties (Addae et al., 2023). Based on the literature concerning implementation challenges, the following hypotheses are proposed:

H1: Competition from other payment options influences technology valuation.

H2: Digital illiteracy influences technology valuation.

H6: Scalability influences technology valuation.

2.3. Opportunities and Potential of Implementing Central Bank Digital Currency

Digital currencies can transform monetary and payment systems by reducing transaction costs, improving payment efficiency, and changing how money is transferred. However, their implementation requires careful consideration of their operational and economic consequences. Infrastructure-related issues, including performance, scalability, and the development of diverse use cases, remain important challenges for digital currency systems. The Reserve Bank of India (RBI) launched a pilot project for the country's digital currency, known as the Digital Rupee or e₹ (Haque & Shoaib, 2023). Previous studies have examined the implications of CBDCs for monetary policy and financial stability (Dionysopoulos & Makridis, 2026). CBDC implementation may contribute to financial stability (Dunbar, 2025), and their potential benefits have been

identified as a key motivation for development (Ozili, 2023). CBDCs may also contribute to reducing shadow banking activities and increasing financial inclusion (Zams et al., 2020). Other potential benefits include reduced loan-loss reserves, improved asset quality, and increased lending (Luu et al., 2023). Blockchain-based digital currencies may also have applications in supply chain management (Ding et al., 2024).

CBDCs may increase financial inclusion by providing alternative channels for accessing financial services (Ozili, 2023) and may strengthen security, supervision, and auditing mechanisms. Digitization can catalyze the relationship between internationalization speed and export resilience by enhancing positive outcomes and mitigating negative effects (Ning et al., 2025). Similarly, the successful implementation of generative artificial intelligence is closely associated with digital technologies and complementary technical skills (Bughin, 2025). CBDC adoption has also been discussed in relation to user attraction, anonymity, and expanded monetary policy possibilities (Maslov, 2023). Based on the potential opportunities identified in the literature, the following hypotheses are proposed:

- H3: Financial inclusion influences technology valuation.
- H4: Economic growth influences technology valuation.
- H5: Payment diversity influences technology valuation.
- H7: Secure and centralized systems influence technology valuation.

2.4. Central Bank Digital Currency (CBDC) and Blockchain Technology

Central Bank Digital Currencies (CBDCs) can incorporate smart contracts and distributed ledger technology (DLT) to support digital financial transactions (Jabbar et al., 2023). Permissioned blockchain networks may be more suitable for CBDC applications than permissionless blockchain networks because central banks generally require greater control over participation, transaction validation, and regulatory compliance. However, blockchain-based CBDCs may face challenges related to transaction performance, scalability, and cross-chain interoperability (Zhang & Huang, 2022).

Previous research has examined how a potential digital currency issued by a central bank could be designed and how it might interact and compete with cryptocurrencies from political and monetary economics perspectives (Raskin & Yermack, 2018). Other studies have focused on the economic rationale for CBDCs and their potential effects on monetary policy transmission, financial stability, price stability, inflation targeting, unconventional monetary policy instruments, the role of central banks as lenders of last resort, and forward guidance (Elsayed & Nasir, 2022). The literature also emphasizes the importance of monitoring digital currency usage to inform digital finance policy, practice, and future research (Esfahbodi et al., 2022). Based on the literature examining the relationship between blockchain technology and CBDCs, the following hypothesis is proposed:

- H8: Technology valuation influences the adoption intention of digital currency.

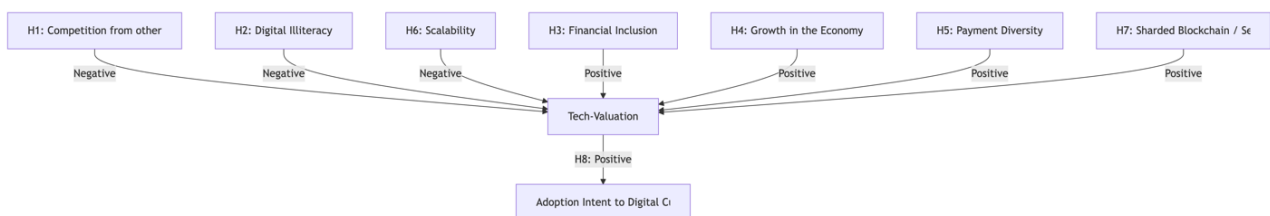


Figure 1. Research model.

2.5. Technology Valuation as a Representation of Blockchain Technology

This study uses the technology valuation framework to operationalize the perceived value of Blockchain Technology (BCT) in the context of CBDC adoption. The survey captures respondents' overall assessment of blockchain technology rather than measuring the technical characteristics of blockchain itself. Technology

valuation reflects respondents' perceptions of the value generated by blockchain technology, particularly in terms of security, transparency, efficiency, immutability, and dependability. Technology valuation represents the perceived value of blockchain technology because user adoption can be influenced by how individuals perceive and evaluate a technology and its expected benefits. Therefore, in the present study, the technology valuation construct represents respondents' perceived value of blockchain technology in the context of CBDC. The proposed model examines how the opportunities and challenges associated with CBDC influence Technology Valuation and, subsequently, how technology valuation influences the intention to adopt digital currency.

2.6. Research Gap

The existing literature on digital transformation and blockchain has largely focused on areas such as Industry 4.0, blockchain applications in accounting, cryptocurrencies, and digital currencies. Although more studies have examined CBDCs, relatively little empirical research has integrated the opportunities and challenges of blockchain technology with CBDC adoption in the specific context of India's e₹. In particular, there is a need for further empirical investigation into how factors such as financial inclusion, economic growth, payment diversity, security, centralization, competition from alternative payment options, digital literacy, and scalability influence perceptions of blockchain technology in the context of CBDC adoption. Limited research also examines how the perceived value of blockchain technology influences individuals' intentions to adopt the Digital Rupee in India. Therefore, this study addresses this gap by examining the relationship between the opportunities and challenges associated with CBDC and Technology Valuation, and by investigating whether Technology Valuation influences the adoption intention of India's Digital Rupee (e₹). The study also provides an integrated perspective on the potential role of blockchain technology in supporting CBDC implementation in India.

3. Methodology

The research methodology was designed to examine the opportunities and challenges of adopting blockchain technology in India's Central Bank Digital Currency (CBDC), with particular reference to the Digital Rupee (e₹), and to assess the influence of technology valuation on digital currency adoption intention. The study adopted a quantitative research design because it aimed to empirically examine the relationships among the identified variables and test the proposed hypotheses. The study collected primary data using a structured questionnaire administered to respondents from urban and semi-urban areas of Rajasthan, India. The target population comprised individuals aged 18 years and above who were familiar with or had experience using digital payment systems, including the Unified Payments Interface (UPI), mobile wallets, and internet banking. The respondents were selected from diverse demographic backgrounds to provide a broader representation of potential digital currency users. Convenience sampling was used because respondents were accessible and the study was exploratory.

Data were collected between June and December 2025. A total of 400 questionnaires were distributed to potential respondents. After collection, the returned questionnaires were screened for completeness and usability. After excluding incomplete or otherwise unsuitable responses, 252 valid questionnaires were retained for the final analysis, representing a valid response rate of 63%. The questionnaire captured respondents' perceptions of the opportunities and challenges associated with blockchain technology in the context of CBDC and their intention to adopt digital currency. Respondents were informed about the purpose of the study and the information collected was used for academic research purposes.

The study employed Structural Equation Modeling (SEM) to examine the proposed relationships among the constructs and to test the research hypotheses. The empirical analysis used Partial Least Squares Structural Equation Modeling (PLS-SEM), which suits complex predictive models with multiple latent variables and supports exploratory relationship assessment.

The constructs included in the research model were operationalized using multiple measurement items adapted from the existing literature. Blockchain technology was operationalized through the technology

valuation construct, which captures respondents' perceptions of the value and usefulness of blockchain technology for implementing CBDC. Four indicators were used to measure technology valuation. These indicators assessed whether blockchain technology could improve the accuracy and reliability of digital currency adoption, contribute to successful digital currency adoption, provide comparability as a desirable feature, and enhance the quality and auditability of digital currency systems. The measurement items were adapted from previous studies, including Zhang and Huang (2022), Elsayed and Nasir (2022), and Jabbar et al. (2023).

Adoption intention was measured using four indicators reflecting respondents' perceptions and intentions regarding the adoption of digital currency. The indicators covered the potential acceptance of CBDC as the use of digital currency increases, the role of perceived ease of use, the importance of perceived trust and security, and the influence of perceived benefits on adoption intention. The items were adapted from the literature, including Kulal et al. (2025), Esfahbodi et al. (2022), Farnoush et al. (2022), and Yussof et al. (2016).

Economic growth was measured using three indicators reflecting the potential contribution of digital currency and blockchain-based systems to economic development. These indicators examined the potential effects of real-time processing, digital currency integration capabilities, and cost efficiency on economic growth. The items were informed by Sun and Li (2024), van Tonder et al. (2023), and Guo et al. (2025). Financial inclusion was measured through three indicators focusing on customization and flexibility, user adoption, and system reliability as potential mechanisms through which digital currency could improve access to financial services. The measurement items were informed by Zams et al. (2020), Ozili (2023), and Luu et al. (2023).

Payment diversity was measured using two indicators addressing the potential of digital technologies to provide diverse payment opportunities and facilitate different forms of digital payment. The measurement items were informed by Kotobi and Bilen (2018) and Cuc (2023). Secure and centralized systems were measured using two indicators relating to the security, centralization, decision-support capabilities, and automation associated with CBDC systems. The items were informed by Jabbar et al. (2023) and Zhang and Huang (2022).

Digital illiteracy was measured using three indicators designed to capture the potential difficulties faced by individuals with limited digital knowledge and skills. The indicators considered difficulties in using digital systems, assessing risks, and understanding data analysis and interpretation. The measurement items were informed by Ozili (2021), Kapliar (2023), and Ozili (2022). Competition from other payment options was measured using three indicators reflecting the competitive environment in which CBDCs would operate. These indicators considered the availability of alternative digital payment platforms, compliance and processing challenges, and competition among CBDCs, other digital currencies, and cryptocurrencies. The items were informed by Esfahbodi et al. (2022), Koziuk (2021), and Xu and Jin (2022).

Scalability was measured using three indicators addressing the ability of blockchain-based CBDC systems to process large transaction volumes and manage substantial amounts of data simultaneously. The indicators also considered the potential contribution of scalability to decision-making. The measurement items were informed by Elsayed and Nasir (2022), Addae et al. (2023), and Yli-Huumo et al. (2016). Table 1 presents the complete set of constructs, measurement items, and their respective sources.

Table 1. Variables and items.

Variable Category	Variable Name	Symbol	Measurement Items	Source
Exogenous Variable	Blockchain Technology (BCT) / Technology Valuation	TV1	Blockchain technology would improve the accuracy and reliability of digital currency adoption.	Zhang & Huang (2022)
		TV2	Blockchain technology would be relevant to the successful adoption of digital currency.	Elsayed & Nasir (2022)
		TV3	Comparability is a beneficial feature of blockchain technology.	—
		TV4	The auditing capabilities of blockchain technology would add to the quality of digital currency.	Jabbar et al. (2023)

Variable Category	Variable Name	Symbol	Measurement Items	Source
Endogenous Variable	Adoption Intention	AI1	The increasing trend of digital currency would contribute to the wider acceptance of CBDC.	Kulal et al. (2025)
		AI2	Perceived ease of use motivates consumers to adopt digital currency.	Esfahbodi et al. (2022)
		AI3	Perceived trust and security are important features that encourage digital currency adoption.	Farnoush et al. (2022)
		AI4	Perceived benefits encourage stakeholders to adopt digital currency.	Yussof et al. (2016)
Exogenous Variable	Economic Growth	GE1	Reducing real-time processing requirements can contribute to economic growth.	Sun & Li (2024)
		GE2	The integration capabilities of digital currency can contribute to sustainable economic growth.	van Tonder et al. (2023)
		GE3	The cost-efficiency features of digital currency can contribute to economic growth.	Guo et al. (2025)
Exogenous Variable	Financial Inclusion	FI1	The customization and flexibility of digital currency can contribute to improved financial inclusion.	Zams et al. (2020)
		FI2	User adoption rates increase with greater adoption of digital currency.	Ozili (2023)
		FI3	Reliability and reduced downtime can make digital currency more trustworthy and adoption-worthy.	Luu et al. (2023)
Exogenous Variable	Payment Diversity	PD1	Advanced analytics and predictive modelling can provide diverse payment opportunities.	Kotobi & Bilen (2018)
		PD2	Digital currency can facilitate greater payment diversity.	Cuc (2023)
Exogenous Variable	Secure and Centralized System	SC1	AI-driven decision support can contribute to a secure and centralized CBDC system.	Jabbar et al. (2023)
		SC2	A higher level of automation can make the use of digital currency more secure.	Zhang & Huang (2022)
Exogenous Variable	Digital Illiteracy	DI1	Digital illiteracy can discourage individuals from using digital systems for reporting and related activities.	Ozili (2021)
		DI2	Due to digital illiteracy, stakeholders may be unable to measure and assess risks effectively.	Kapliar (2023)
		DI3	Digital illiteracy negatively influences the understanding of data analysis and interpretation.	Ozili (2022)
Exogenous Variable	Competition from Other Payment Options	CP01	Stakeholders may be attracted to digital currency platforms that offer easier and more efficient processing.	Esfahbodi et al. (2022)
		CP02	Compliance testing may be difficult to implement effectively.	Koziuk (2021)
		CP03	CBDC has to compete with other digital currencies and cryptocurrencies.	Xu & Jin (2022)
Exogenous Variable	Scalability	SB1	Limited scalability can be a barrier to handling enormous amounts of transactions.	Elsayed & Nasir (2022)
		SB2	Scalability concerns may create difficulties in managing large volumes of data simultaneously.	Addae et al. (2023)
		SB3	Scalability can help improve decision-making.	Yli-Huumo et al. (2016)

4. Results

Table 2 presents the results of the measurement model assessment, including indicator reliability, internal consistency reliability, convergent validity, coefficient of determination (R^2), and collinearity diagnostics. The outer loadings of the retained indicators range from 0.771 to 0.889, exceeding the commonly accepted threshold of 0.70. This indicates that all indicators demonstrate adequate indicator reliability and make a satisfactory contribution to their respective latent constructs. The Cronbach's alpha coefficients range from 0.610 to 0.891. Most constructs demonstrate acceptable internal consistency, with coefficients above the recommended threshold of 0.70. However, payment diversity reports a relatively lower Cronbach's alpha of 0.610, indicating comparatively modest internal consistency. Nevertheless, its composite reliability ($\rho_C = 0.822$) is above the recommended threshold, providing additional evidence of acceptable construct reliability. The composite reliability (ρ_C) values range from 0.822 to 0.924, demonstrating satisfactory internal consistency reliability across the constructs. The AVE values range from 0.645 to 0.774, with all values exceeding the

recommended minimum of 0.50. Thus, each construct explains more than 50% of the variance in its respective indicators, supporting the convergent validity of the measurement model. The R^2 values are reported for the endogenous constructs. Technology valuation has an R^2 of 0.891, indicating that 89.1% of the variance in Technology valuation is explained by the predictor constructs included in the structural model. Similarly, Adoption intention has an R^2 of 0.631, indicating that 63.1% of the variance in Adoption Intention is explained by technology valuation. The VIF values range from 1.195 to 2.658, remaining below the commonly applied threshold of 3.3. This indicates that problematic multicollinearity is not evident among the predictors.

Table 2. Measurement model with construct reliability and convergent validity.

Construct	Item	Outer Loading	Cronbach's Alpha (α)	Composite Reliability (qA)	Composite Reliability (qC)	AVE	R^2	VIF	Decision
Competition from Other Payment Options	CP01	0.848	0.817	0.817	0.891	0.732	—	1.778	Established
	CP02	0.860						1.871	Established
	CP03	0.857						1.785	Established
Digital Illiteracy	DI1	0.867	0.799	0.799	0.875	0.701	—	1.740	Established
	DI2	0.853						1.762	Established
	DI3	0.790						1.518	Established
Financial Inclusion	FI1	0.799	0.731	0.731	0.845	0.645	—	1.447	Established
	FI2	0.771						1.364	Established
	FI3	0.837						1.485	Established
Growth in Economy	GE1	0.775	0.754	0.760	0.859	0.671	—	1.424	Established
	GE2	0.815						1.529	Established
	GE3	0.865						1.742	Established
Payment Diversity	PD1	0.781	0.610	0.610	0.822	0.698	—	1.195	Established
	PD2	0.887						1.195	Established
Scalability	SB1	0.857	0.826	0.826	0.896	0.742	—	1.883	Established
	SB2	0.876						2.017	Established
	SB3	0.851						1.769	Established
Secure and Centralized System	SC1	0.874	0.709	0.709	0.873	0.774	—	1.430	Established
	SC2	0.886						1.430	Established
Technology Valuation	TV1	0.852	0.891	0.891	0.924	0.752	0.891	2.277	Established
	TV2	0.881						2.658	Established
	TV3	0.886						2.594	Established
	TV4	0.850						2.186	Established
Adoption Intention	AI1	0.816	0.880	0.880	0.901	0.696	0.631	1.881	Established
	AI2	0.823						1.906	Established
	AI3	0.805						1.960	Established
	AI4	0.889						2.314	Established

Table 3 shows that all HTMT values range from 0.689 to 0.896, which are below the recommended threshold of 0.90. This indicates that the constructs demonstrate adequate discriminant validity and are sufficiently distinct from one another. Therefore, discriminant validity is established among all study constructs.

Table 3. Discriminant validity assessment using HTMT.

Constructs	APA	BCT	EAP	IA	QF	SMA	TA
APA	—						
BCT	0.786	—					
EAP	0.823	0.768	—				
IA	0.887	0.745	0.895	—			
QF	0.800	0.894	0.823	0.795	—		
SMA	0.884	0.886	0.691	0.714	0.800	—	
TA	0.844	0.893	0.689	0.752	0.877	0.896	—

Table 4 presents the results of the structural model and hypothesis testing using the standardized path coefficients (β), sample means, standard deviations, t-values, and p-values. The significance of the hypothesized relationships was assessed using the bootstrapping procedure. At the 5% significance level, relationships with $p < 0.05$ are considered statistically significant. The results show that competition from other

payment options has a positive and statistically significant relationship with technology valuation ($\beta = 0.341$, $t = 13.283$, $p < 0.001$). This indicates that the estimated relationship is positive and statistically significant. Digital illiteracy also has a positive and statistically significant relationship with Technology Valuation ($\beta = 0.266$, $t = 11.558$, $p < 0.001$). Similarly, financial inclusion has a positive and statistically significant relationship with technology valuation ($\beta = 0.106$, $t = 4.360$, $p < 0.001$). Growth in the economy also demonstrates a positive and statistically significant relationship with Technology Valuation ($\beta = 0.068$, $t = 2.843$, $p = 0.004$). In addition, payment diversity has a positive and statistically significant relationship with technology valuation ($\beta = 0.181$, $t = 8.255$, $p < 0.001$). The relationship between scalability and technology valuation is positive but statistically nonsignificant ($\beta = 0.030$, $t = 1.028$, $p = 0.304$). Since the p-value exceeds 0.05, there is insufficient statistical evidence to support a relationship between scalability and technology valuation. Accordingly, H6 is not supported. The relationship between secure and centralized system and technology valuation is positive and statistically significant ($\beta = 0.189$, $t = 7.344$, $p < 0.001$). Finally, technology valuation has a strong positive and statistically significant relationship with adoption intention ($\beta = 0.794$, $t = 50.159$, $p < 0.001$). The coefficient indicates a strong positive association between technology valuation and respondents' intention to adopt digital currency. The R^2 value of 0.891 for technology valuation indicates that 89.1% of its variance is explained by the predictor constructs in the model. The R^2 value of 0.631 for adoption intention indicates that technology valuation explains 63.1% of the variance in adoption intention (Figure 2).

Table 4. Structural model results and hypothesis testing.

Hypothesis	Structural Path	β	STDEV	t-value	P-value	R^2	Decision
H1	Competition from Other Payment Options $\rightarrow$ Technology Valuation	0.341	0.026	13.283	<0.001	—	Supported
H2	Digital Illiteracy $\rightarrow$ Technology Valuation	0.266	0.023	11.558	<0.001	—	Supported
H3	Financial Inclusion $\rightarrow$ Technology Valuation	0.106	0.024	4.360	<0.001	—	Supported
H4	Growth in Economy $\rightarrow$ Technology Valuation	0.068	0.024	2.843	0.004	—	Supported
H5	Payment Diversity $\rightarrow$ Technology Valuation	0.181	0.022	8.255	<0.001	—	Supported
H6	Scalability $\rightarrow$ Technology Valuation	0.030	0.030	1.028	0.304	—	Not Supported
H7	Secure and Centralized System $\rightarrow$ Technology Valuation	0.189	0.026	7.344	<0.001	0.891	Supported
H8	Technology Valuation $\rightarrow$ Adoption Intention	0.794	0.016	50.159	<0.001	0.631	Supported

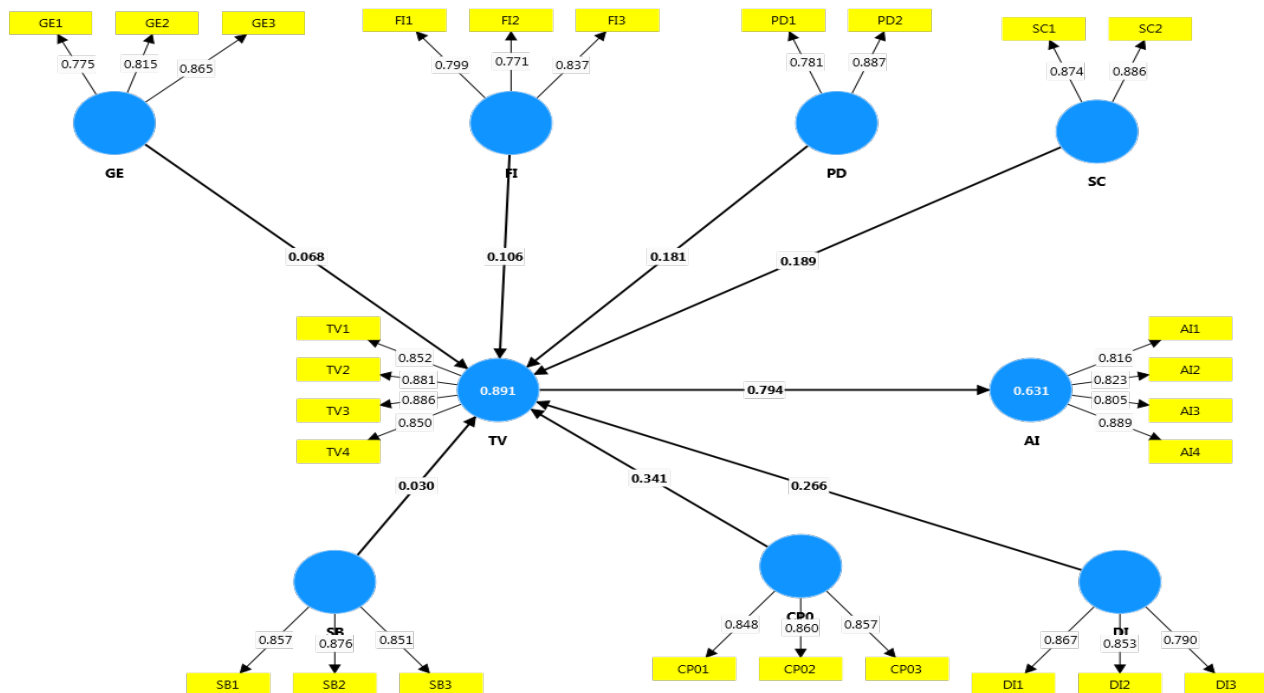


Figure 2. Structural model.

Table 5 presents the model-fit statistics for both the saturated and estimated models. The SRMR value is 0.075 for the saturated model and 0.076 for the estimated model. Both values are below the commonly applied

threshold of 0.08, indicating an acceptable level of approximate model fit based on SRMR. The d_{ULS} values are 2.132 for the saturated model and 2.184 for the estimated model, while the d_G values are 1.668 and 1.688, respectively. These are discrepancy-based fit measures that are generally interpreted in conjunction with bootstrapping results rather than against a single universal cutoff value. Therefore, these statistics should be reported without making an unsupported categorical claim about model fit. The chi-square values are 3276.692 for the saturated model and 3296.702 for the estimated model. The chi-square statistic represents the discrepancy between the observed and model-implied covariance structures. In PLS-SEM, it should be interpreted cautiously because it can be influenced by sample size and model complexity. The NFI values are 0.651 for the saturated model and 0.649 for the estimated model. These values indicate relatively limited incremental fit compared with the null model. Therefore, the NFI should not be described as demonstrating strong or satisfactory model fit.

Table 5. Model fit.

	Saturated model	Estimated model
SRMR	0.075	0.076
d_{ULS}	2.132	2.184
d_G	1.668	1.688
Chi-square	3276.692	3296.702
NFI	0.651	0.649

5. Discussion

The findings provide important insights into the factors influencing technology valuation and adoption intention toward digital currency. The structural model demonstrates that competition from other payment options, digital illiteracy, financial inclusion, economic growth, payment diversity, and a secure and centralized system have statistically significant positive relationships with technology valuation, whereas scalability has a positive but non-significant relationship. In addition, technology valuation has a strong positive relationship with adoption intention.

The results support H1, showing that competition from other payment options positively influences technology valuation ($\beta = 0.341$, $t = 13.283$, $p < 0.001$). This represents the strongest predictor of technology valuation in the model. The finding suggests that the presence of alternative payment mechanisms may increase the perceived importance and value of digital currency by encouraging technological differentiation, improved functionality, and greater convenience. Rather than viewing competing payment options only as substitutes, users may assess digital currency according to its ability to provide additional or improved value compared with existing alternatives. This finding is consistent with Sun and Li (2024), who emphasize the role of digital currencies and digital payments in transforming financial transactions and supporting the digital economy. Practically, digital-currency developers should focus on distinctive benefits, interoperability, convenience, and functionality to remain relevant within a competitive payment ecosystem.

H2 is also supported, as digital illiteracy has a positive and significant relationship with technology valuation ($\beta = 0.266$, $t = 11.558$, $p < 0.001$). Although this positive relationship differs from the conventional assumption that digital illiteracy represents only a barrier, it may indicate that respondents recognize the importance of digital capabilities and the potential value of digital currency in addressing existing limitations in accessing digital financial services. Ozili (2021) identifies digital illiteracy as an important challenge associated with digital financial technologies. The finding therefore highlights the need for digital-literacy initiatives, simple interfaces, user education, and accessible support mechanisms.

H3 is supported because financial inclusion positively influences technology valuation ($\beta = 0.106$, $t = 4.360$, $p < 0.001$). This indicates that digital currency is perceived as more valuable when it can contribute to broader access to financial services. The result supports Sun and Li (2024), who identify financial inclusion as an important potential benefit of CBDCs. Policymakers and financial institutions should therefore consider accessibility, affordable transactions, and services for financially underserved populations when designing digital-currency systems.

Similarly, H4 is supported, with growth in economy positively influencing technology valuation ($\beta = 0.068$, $t = 2.843$, $p = 0.004$). This finding indicates that respondents associate digital-currency technology with broader economic and digital-economy development. Consequently, digital-currency initiatives should be integrated with wider digital-economic strategies, including digital commerce, financial infrastructure, and business transactions.

H5 is supported because payment diversity has a positive and significant effect on technology valuation ($\beta = 0.181$, $t = 8.255$, $p < 0.001$). This suggests that users value digital currency when it expands payment flexibility and complements existing payment mechanisms. Sun and Li (2024) similarly emphasize the growing importance of digital currencies and mobile payments. Practically, interoperability between digital currency, banking systems, mobile payments, and other payment platforms should be prioritized.

In contrast, H6 is not supported. Scalability has a positive but statistically non-significant relationship with technology valuation ($\beta = 0.030$, $t = 1.028$, $p = 0.304$). Although Haque and Shoaib (2023) identify scalability as an important challenge for digital-currency infrastructure, the present findings indicate that respondents did not significantly associate scalability with technology valuation. This may be because scalability is primarily an underlying technical characteristic that users cannot directly observe. Nevertheless, scalability remains important for developers because digital-currency infrastructure must accommodate future transaction volumes.

H7 is supported, as secure and centralized system positively influences technology valuation ($\beta = 0.189$, $t = 7.344$, $p < 0.001$). This finding is consistent with Buldas et al. (2022), who emphasize secure and efficient blockchain implementation. The result indicates that security and system reliability contribute to perceived technological value. Accordingly, policymakers and developers should prioritize cybersecurity, authentication, privacy, fraud prevention, and reliable system governance.

Finally, H8 is strongly supported, with Technology Valuation positively influencing Adoption Intention ($\beta = 0.794$, $t = 50.159$, $p < 0.001$). The strength of this relationship indicates that users' perceived value of digital currency is closely associated with their intention to adopt it. The finding is consistent with Esfahbodi et al. (2022), who emphasize the importance of technological factors in technology acceptance. The findings imply that successful digital-currency adoption requires more than technological implementation; users must perceive clear economic, financial, payment, security, and practical value.

6. Conclusion

This study examined the factors influencing technology valuation and adoption intention toward digital currency. The findings demonstrate that technology valuation is shaped by a combination of competitive, financial, economic, payment, digital, and technological factors. Specifically, competition from other payment options, digital illiteracy, financial inclusion, growth in economy, payment diversity, and secure and centralized system were found to have positive and statistically significant relationships with technology valuation. Among these factors, competition from other payment options demonstrated the strongest relationship, highlighting the importance of the broader payment ecosystem in shaping perceptions of digital currency technology. In contrast, scalability showed a positive but statistically non-significant relationship with technology valuation, indicating that scalability was not a significant determinant of perceived technological value within the context of this study. The study further established that technology valuation has a strong and statistically significant positive relationship with adoption intention ($\beta = 0.794$, $p < 0.001$). This finding demonstrates that users' perceptions of the value and usefulness of digital currency are closely associated with their intention to adopt it. The study concludes that the successful development and adoption of digital currency depend not only on technological infrastructure but also on the economic, financial, competitive, and user-related environment in which the technology operates. Financial inclusion and payment diversity demonstrate the importance of creating practical value for users, while security and system characteristics highlight the importance of trust and reliability. The findings also indicate that digital literacy and competition should be considered when developing strategies for digital-currency implementation.

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References

- Addae, J. A., Ahmed, S., & Ofori, K. S. (2023). Learnings from discontinued central bank digital currencies (CBDC): A multiple case study analysis. In *Exploring the dark side of FinTech and implications of monetary policy*. IGI Global. <https://doi.org/10.4018/978-1-6684-6381-9.ch008>
- Alsalmi, N., Ullah, S., & Rafique, M. (2023). Accounting for digital currencies. *Research in International Business and Finance*, 64, 101897. <https://doi.org/10.1016/j.ribaf.2023.101897>
- Bughin, J. (2025). The interaction of market power and dynamic capabilities in shaping digital transformations success. *IEEE Transactions on Engineering Management*, 73, 612–625. <https://doi.org/10.1109/TEM.2025.3640397>
- Cheng, P. (2023). Decoding the rise of central bank digital currency in China: Designs, problems, and prospects. *Journal of Banking Regulation*, 24(2). <https://doi.org/10.1057/s41261-022-00193-5>
- Cuc, S. (2023). Unlocking the potential of blockchain technology in the textile and fashion industry. *FinTech*, 2(2). <https://doi.org/10.3390/fintech2020018>
- Ding, S., Hu, H., Chai, Z., & Wang, W. (2024). Secure and formalized blockchain-IPFS information sharing in precast construction from the whole supply chain perspective. *Journal of Construction Engineering and Management*, 150(1), 04023150. <https://doi.org/10.1061/JCEMD4.COENG-13547>
- Dionysopoulos, L., & Makridakis, C. A. (2026). Central bank digital currency rhetoric and stablecoin market responses. *Journal of the Royal Statistical Society Series A: Statistics in Society*, 189(2), 630–645. <https://doi.org/10.1093/jrssa/qnaf172>

- Dunbar, K. (2025). FinTech for inclusivity, growth, and the future. *Finance Research Letters*, 109436. <https://doi.org/10.1016/j.frl.2025.109436>
- Elsayed, A. H., & Nasir, M. A. (2022). Central bank digital currencies: An agenda for future research. *Research in International Business and Finance*, 62, 101736. <https://doi.org/10.1016/j.ribaf.2022.101736>
- Esfahbodi, A., Pang, G., & Peng, L. (2022). Determinants of consumers' adoption intention for blockchain technology in e-commerce. *Journal of Digital Economy*, 1(2), 89–101. <https://doi.org/10.1016/J.JDEC.2022.11.001>
- Farnoush, A., Gupta, A., Dolarsara, H. A., Paradise, D., & Rao, S. (2022). Going beyond intent to adopt blockchain: An analytics approach to understand board member and financial health characteristics. *Annals of Operations Research*, 308(1–2). <https://doi.org/10.1007/s10479-021-04113-0>
- Flores Gálvez, J. N., & Mata Hernández, J. M. (2023). CBDC-MXN: Challenges and perspectives in the implementation as a Mexican digital currency. *Mercados y Negocios*, 2023(49). <https://doi.org/10.32870/myn.vi49.7689>
- Guo, Y., Yousef, E., & Naseer, M. M. (2025). Cryptocurrencies and central bank digital currencies in global perspective. *Journal of Risk and Financial Management*, 18(11), 644. <https://doi.org/10.3390/jrfm18110644>
- Horváth, D. (2023). Money in the digital age: Exploring the potential of central bank digital currency with a focus on social adaptation and education. *Sustainable Futures*, 6, 100136. <https://doi.org/10.1016/j.sftr.2023.100136>
- Jabbar, A., Geebren, A., Hussain, Z., Dani, S., & Ul-Durar, S. (2023). Investigating individual privacy within CBDC: A privacy calculus perspective. *Research in International Business and Finance*, 64, 101826. <https://doi.org/10.1016/j.ribaf.2022.101826>
- Kapliar, K. (2023). CBDC as a challenge to commercial neo-banks. *Modern Science*. <https://doi.org/10.62204/2336-498X-2023-1-4>
- Keister, T., & Sanches, D. (2023). Should central banks issue digital currency? *The Review of Economic Studies*, 90(1), 404–431. <https://doi.org/10.1093/restud/rdac017>
- Kim, K., Lee, G., & Kim, S. (2020). A study on the application of blockchain technology in the construction industry. *KSCE Journal of Civil Engineering*, 24(9). <https://doi.org/10.1007/s12205-020-0188-x>
- Kotobi, K., & Bilen, S. G. (2018). Secure blockchains for dynamic spectrum access: A decentralized database in moving cognitive radio networks enhances security and user access. *IEEE Vehicular Technology Magazine*, 13(1). <https://doi.org/10.1109/MVT.2017.2740458>
- Koziuk, V. (2021). Confidence in digital money: Are central banks more trusted than age is matter? *Investment Management and Financial Innovations*, 18(1). [https://doi.org/10.21511/imfi.18\(1\).2021.02](https://doi.org/10.21511/imfi.18(1).2021.02)
- Kulal, A., Parvin, S. M. R., Dinesh, S., N, A., Panakaje, N., & Ramzan, M. (2025). Developing a digital currency adoption scale: A validity and reliability study. *Sustainable Futures*, 9, 100422. <https://doi.org/10.1016/J.SFTR.2024.100422>
- Luu, H. N., Nguyen, C. P., & Nasir, M. A. (2023). Implications of central bank digital currency for financial stability: Evidence from the global banking sector. *Journal of International Financial Markets, Institutions and Money*, 89, 101864. <https://doi.org/10.1016/j.intfin.2023.101864>
- Marple, T. (2021). Bigger than Bitcoin: A theoretical typology and research agenda for digital currencies. *Business and Politics*, 23(4), 439–455. <https://doi.org/10.1017/bap.2021.12>
- Maslov, D. (2023). Ukrainian CBDC e-hryvnia: Challenges of introduction and opportunities to improve the efficiency of business processes in commercial banks. *Economic Innovations*, 25(2[87]), 49–54. [https://doi.org/10.31520/ei.2023.25.2\(87\).49-54](https://doi.org/10.31520/ei.2023.25.2(87).49-54)
- Meena Kumari, J. (2021). Central bank digital currency (CBDC): Can it replace notes and coins in India? *Shanlax International Journal of Management*, 8(S1-Feb). <https://doi.org/10.34293/management.v8iS1-Feb.3754>
- Meier, S., & Kondova, G. (2023). The potential impact of central bank digital currencies (CBDCs) on economic and financial sector development. In *International Congress on Information and Communication Technology* (pp. 427–434). Springer Nature Singapore. https://doi.org/10.1007/978-981-99-3043-2_33
- Ning, L., Honglie, Z., & Meng, L. (2025). State-owned equity and innovation performance of mixed-ownership enterprises in China: The moderating effect of marketization. *Managerial and Decision Economics*, 46(1). <https://doi.org/10.1002/mde.4374>
- Ogunode, O. A., & Dada, S. O. (2022). Fraud prevention strategies: An integrative approach on the role of forensic accounting. *Archives of Business Research*, 10(7). <https://doi.org/10.14738/abr.107.12613>

- Ozili, P. K. (2021). Central bank digital currency in Nigeria: Opportunities and risks. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.3917936>
- Ozili, P. K. (2022). Central bank digital currency in Nigeria: Opportunities and risks. In *Contemporary studies in economic and financial analysis* (Vol. 109A). Emerald Publishing. <https://doi.org/10.1108/S1569-37592022000109A008>
- Ozili, P. K. (2023). CBDC, FinTech and cryptocurrency for financial inclusion and financial stability. *Digital Policy, Regulation and Governance*, 25(1). <https://doi.org/10.1108/DPRG-04-2022-0033>
- Raskin, M., & Yermack, D. (2018). Digital currencies, decentralized ledgers and the future of central banking. In *Research handbook on central banking* (pp. 474–486). Edward Elgar Publishing. <https://doi.org/10.4337/9781784719227.00028>
- Sethaput, V., & Innet, S. (2023). Blockchain application for central bank digital currencies (CBDC). *Cluster Computing*, 26(4), 2183–2197. <https://doi.org/10.1007/s10586-022-03962-z>
- Sun, M., & Li, Z. (2024). User perception and acceptance of central bank digital currency in developed and developing countries: An empirical study using technology acceptance model. *UCJC Business and Society Review*, 21(80), 456–511. <https://doi.org/10.3232/UBR.2024.V21.N1.11>
- van Tonder, C., Bossink, B., Schachtebeck, C., & Nieuwenhuizen, C. (2023). The effect of digitally-driven business model innovation on business performance. *Journal of Small Business and Entrepreneurship*. <https://doi.org/10.1080/08276331.2023.2239039>
- Venkatesh, V., Thong, J. Y. L., & Xu, X. (2012). Consumer acceptance and use of information technology: Extending the unified theory of acceptance and use of technology. *MIS Quarterly: Management Information Systems*, 36(1). <https://doi.org/10.2307/41410412>
- Xu, C., & Jin, B. (2022). Digital currency in China: Pilot implementations, legal challenges and prospects. *Juridical Tribune*, 12, 177. <https://doi.org/10.24818/TBJ/2022/12/2.02>
- Yli-Huumo, J., Ko, D., Choi, S., Park, S., & Smolander, K. (2016). Where is current research on blockchain technology?—A systematic review. *PLoS ONE*, 11(10), e0163477. <https://doi.org/10.1371/journal.pone.0163477>
- Yussof, S. A., Alharthy, A. M. H., & Chahed, H. (2016). An exploratory study on the adoption of cryptocurrency as an alternative currency in Malaysia. In *Proceedings of the International Congress on Politics, Economic and Social Studies (ICPESS)*.
- Zams, B. M., Indrastuti, R., Pangersa, A. G., Hasniawati, N. A., Zahra, F. A., & Fauziah, I. A. (2020). Designing central bank digital currency for Indonesia: The Delphi-analytic network process. *Bulletin of Monetary Economics and Banking*, 23(3), 413–440. <https://doi.org/10.21098/bemp.v23i3.1351>
- Zhang, J., Zhong, S., Wang, T., Chao, H. C., & Wang, J. (2020). Blockchain-based systems and applications: A survey. *Journal of Internet Technology*, 21(1), 1–14.
- Zhang, T., & Huang, Z. (2022). Blockchain and central bank digital currency. *ICT Express*, 8(2), 264–270. <https://doi.org/10.1016/j.ict.2021.09.014>

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