Comparative Analysis of CBDC Adoption across Developing and Developed Countries: A Systematic Literature Review

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Abstract

The primary objective of the present investigation is to examine the determinants that affect the adoption of Central Bank Digital Currencies (CBDCs) and the subsequent implications for financial systems on a global scale. A comparative analysis methodology is employed to assess the variables influencing CBDC adoption in both developed and developing nations through a systematic literature review (SLR) framework. The principal findings elucidate that elevated Gross Domestic Product (GDP) and internet penetration substantially enhance the probability of CBDC adoption, underscoring the significance of economic advancement and technological infrastructure. Moreover, CBDCs exert a more pronounced beneficial effect in emerging economies in comparison to their advanced counterparts, with retail CBDCs facilitating stability more efficiently than wholesale CBDCs. The implementation of Central Bank Digital Currencies (CBDCs) demonstrates considerable variation between nations classified as developing and those deemed developed, shaped by a multitude of economic, social, and regulatory determinants. This comparative examination elucidates that, although both categories are investigating the potential of CBDCs, their underlying motivations and strategies for implementation diverge significantly, mirroring their respective contexts and challenges. Developed nations prioritize the enhancement of payment efficiency, the maintenance of financial stability, and the mitigation of privacy concerns. For example, the United States is currently conducting research on a Digital Dollar amidst ongoing discussions regarding privacy implications, while the European Union's Digital Euro underscores the importance of strategic autonomy. Conversely, developing nations are frequently motivated by the imperative for financial inclusion and the pursuit of economic stability. The study highlighted that adoption of CBDCs presents numerous opportunities for enhancing financial systems, but it also poses significant challenges, such as potential bank disintermediation and the need for robust regulatory frameworks. This study underscores the importance of balancing innovation with stability and security to ensure the successful integration of CBDCs into the global financial ecosystem.

Keywords: CBDC Adoption; Systematic Literature Review; Comparative Analyses

1. Introduction

Numerous nations, encompassing both emerging and advanced economies, are diligently investigating or have initiated the implementation of Central Bank Digital Currencies (CBDCs). Emerging economies such as China, India, Brazil, the Bahamas, Jamaica, and Nigeria are leading this progressive movement, with several having already deployed CBDCs. Likewise, advanced economies including Japan, South Korea, the United States, the European Union, the United Kingdom, Australia, and Russia are concurrently participating in CBDC endeavors. Developed countries frequently possess sophisticated technological infrastructures, which facilitate the deployment of CBDCs. Hence, increased internet penetration and technological preparedness are positively associated with the adoption of CBDCs in these countries (Koparan, 2025).

In developing countries, technological infrastructure may be comparatively underdeveloped, the promising prospects for rapid settlement and minimal transaction costs presented by CBDCs are enticing. CBDCs present considerable prospects for financial inclusion in developing nations while challenges encompass the establishment of requisite digital infrastructure and the cultivation of public trust in digital currencies.

This research investigates the economic, technological, social, determinants that affect the implementation of central bank digital currencies (CBDCs) across developed and developing nations, thereby contributing novel insights into the dynamics of technology adoption within both advanced and emerging economies.

The evolution of money has entered a new era with the emergence of Central Bank Digital Currencies (CBDCs)—digital forms of sovereign currency issued and regulated by central banks. As technological innovation accelerates and digital payments become ubiquitous, many governments and central banks are actively exploring or implementing CBDCs to modernize payment systems, enhance financial inclusion, and reinforce monetary sovereignty.

CBDCs represent a paradigm shift from traditional fiat currency and commercial digital payments. Unlike cryptocurrencies such as Bitcoin, which operate on decentralized networks and often lack state backing, CBDCs are centralized and anchored in existing legal and regulatory systems. Their introduction poses both opportunities and challenges in terms of payment efficiency, security, privacy, financial stability, and the future of monetary policy.

Across the globe, countries are pursuing CBDC initiatives with diverse motivations and models. For instance, China’s digital yuan (DCEP) is geared toward achieving leadership in digital finance and improving cross-border transactions, while Nigeria’s eNaira and Jamaica’s JAM-DEX aim to strengthen financial inclusion and reduce the dependency on cash. Meanwhile, nations such as Sweden, India, and the Bahamas are experimenting with different technologies, stakeholder partnerships, and regulatory approaches. These efforts reveal a complex and varied global landscape of CBDC development.

Despite the growing body of research on CBDCs, there remains a need for comparative and critical analysis that examines not only the technical and economic, social and institutional factors of CBDC adoption across developed and developing countries. This research aims to bridge that gap. The key objectives of this paper is to compare the design, implementation strategies, and policy objectives of CBDCs in selected countries through systematic literature review (SLR). SLR is a structured, comprehensive, and transparent process of identifying, selecting, and evaluating existing research to answer a specific research question. This study contributes to the growing literature on CBDCs and offers a research framework for central banks navigating the evolving digital currency landscape for both developed and developing nations.

2. Literature Review

The concept of CBDC has attracted growing academic, regulatory, and industry attention over the past decade, particularly as technological disruption redefines how money is issued, distributed, and used. Scholars have approached CBDCs from various angles—monetary policy implications, financial inclusion potential, payment system efficiency, privacy concerns, and geopolitical considerations. This section synthesizes existing literature to frame the theoretical and empirical backdrop of this study.

2.1 Defining CBDCs and Their Typology

Central Bank Digital Currencies (CBDCs) are digital representations of fiat currency that are issued and overseen by a central banking authority, denoting a direct entitlement on the balance sheet of the central bank (Bofinger & Haas, 2020). In contrast to commercial bank money or decentralized cryptocurrencies such as Bitcoin, CBDCs possess sovereign characteristics, are centralized in nature, and are formally acknowledged as legal tender. The Bank for International Settlements (2020) categorizes CBDCs into two primary classifications. Retail CBDCs is designed for utilization by the general populace, comparable to physical cash. Wholesale CBDCs is limited to financial institutions for the purpose of settling interbank transactions. This classification bears considerable implications for the design, execution, and policy ramifications (Auer et al., 2023). The propositions articulated by Josyula (2023) furnish valuable perspectives for central banking institutions engaged in the establishment of effective Central Bank Digital Currency (CBDC) initiatives that emphasize financial inclusivity, stimulate innovative practices, and uphold regulatory adherence, thereby playing a pivotal role in the advancement of digital finance and the metamorphosis of the international financial landscape.

2.2. Motivations Behind CBDC Development in developing countries

The implementation of Central Bank Digital Currencies (CBDCs) in developing nations offers a substantial opportunity to enhance financial inclusivity, optimize tax administration processes, and reinforce monetary policy frameworks. Developing nations are progressively investigating CBDCs as a mechanism to tackle issues of financial inclusion and bolster economic resilience, utilizing pre-existing digital infrastructures such as mobile money to magnify their effects. The subsequent sections will explore the potential advantages, challenges, and strategic considerations pertinent to the adoption of CBDCs in these regions.

CBDCs possess the capacity to markedly improve financial inclusion by offering digital financial services to populations that are unbanked and underbanked. This phenomenon is particularly salient in developing countries where conventional banking infrastructures are deficient (Gazi, 2024; Tan, 2023). The implementation of CBDCs can diminish transaction costs and foster competition among private payment systems, thereby enhancing the overall efficiency of payment systems (Gazi, 2024). In Kazakhstan, the "Digital Tenge" initiative seeks to broaden access to financial services and fortify monetary regulations, exemplifying how CBDCs can be customized to meet specific national contexts in order to advance financial inclusion (Kayani et al., 2024). CBDCs provide enhanced transparency, security, and traceability, which can assist tax authorities in monitoring income and identifying tax evasion, potentially resulting in increased tax revenue within low- and middle-income countries (LMICs) (Arewa, 2024). The capability to effectively oversee transactions can contribute to a reduction in the size of the informal economy and promote improved tax compliance (Ozili, 2024). The propensity for CBDC adoption is shaped by variables such as GDP levels, internet penetration, and indicators of financial inclusion. Elevated GDP and internet usage significantly elevate the likelihood of CBDC adoption (Koparan, 2025). Developing nations frequently adopt a two-tier architecture for CBDCs, wherein central banks issue digital currencies to commercial banks for subsequent distribution to consumers. This framework may assist in alleviating the risks associated with bank disintermediation (Kochergin et al, 2024; Tan, 2023).

2.3. Challenges of CBDC Development in developing countries

Cybersecurity vulnerabilities and the risk of bank disintermediation present considerable challenges in the adoption of CBDCs. The implementation of robust security protocols and the preservation of banks' roles within the financial ecosystem are imperative considerations (Kochergin et al., 2024). The efficacy of CBDCs is contingent upon user trust and confidence in digital currencies as a medium of payment and settlement. Public awareness and educational initiatives are vital to cultivate understanding and acceptance of CBDCs (Gazi, 2024; Kraft, 2024). Strategic Considerations for Adoption Policymakers ought to prioritize investments in digital infrastructure and financial inclusion strategies to facilitate the seamless integration of CBDCs into national economies (Koparan, 2025). Strategic alliances and engagement with stakeholders are essential for securing commercial participation and ensuring the successful deployment of CBDCs (Kraft, 2024). An inclusive and consumer-oriented digital currency ecosystem, characterized by interoperable payment platforms, can amplify the beneficial impacts of CBDCs on financial inclusion (Gazi, 2024).

Although CBDCs possess the transformative potential to reshape financial landscapes in developing countries, their successful implementation necessitates meticulous consideration of technological, economic, and social dimensions. The assimilation of CBDCs into prevailing financial systems must be meticulously managed to avert destabilization and to ensure that the advantages surpass the associated challenges. Furthermore, while CBDCs may enhance financial inclusion and optimize tax administration, they are unlikely to completely supplant cash or eradicate persistent issues such as institutional corruption and poverty (Ozili, 2024).

2.4 Factors Influencing CBDC adoption in developing countries

The integration of CBDCs within developing nations is shaped by a multitude of determinants, encompassing economic, technological, and social dimensions as shown in Figure 1. These determinants collectively delineate the environment for CBDC deployment, presenting both prospects and obstacles for these nations. The subsequent sections explore the principal factors influencing CBDC adoption in such contexts.

2.4.1. Economic Factors

Financial Inclusion: Elevated levels of financial inclusion exhibit a positive correlation with the adoption of CBDCs. Nations demonstrating enhanced financial inclusion metrics, such as account ownership, are predisposed to embrace CBDCs, as these digital currencies have the potential to further augment economic engagement and access to financial services (Dong et al., 2024) (Koparan, 2025).

Economic Development: The levels of Gross Domestic Product (GDP) exert a significant influence on CBDC adoption, with elevated GDP correlating with a heightened likelihood of both operational and pilot CBDC initiatives. This underscores the role of economic development in enabling the requisite infrastructure and resources for the implementation of CBDCs (Koparan, 2025).

Remittances and Net Foreign Assets: Countries with higher remittances and net foreign assets are more likely to adopt CBDCs, as these factors contribute to economic stability and the ability to manage digital currency systems effectively (Dong et al., 2024). Countries characterized by low financial stability and those subjected to economic sanctions exhibit a greater tendency to adopt CBDCs. This inclination frequently arises from the necessity for alternative financial mechanisms that can provide stability and circumvent limitations imposed by sanctions (Mohammed et al., 2024).

2.4.2. Technological Factors

Internet Usage and Digital Infrastructure: Enhanced internet usage and a robust digital infrastructure are paramount for the adoption of CBDCs. These elements significantly bolster the prospects for successful implementation by facilitating the essential technological framework for digital currency transactions (Koparan, 2025).

Technological Advancements: The evolution of secure and efficient digital payment systems is critical for the adoption of CBDCs. Nations endowed with advanced technological capabilities are more favorably positioned to execute CBDCs effectively (Le et al., 2025).

2.4.3. Social Factors

Policy and Regulatory Environment: An enabling policy and regulatory framework is indispensable for the adoption of CBDCs. Policy facilitation, encompassing governmental initiatives and regulatory support, constitutes a vital determinant of user readiness to embrace digital currencies (Pastukhov, 2025).

Trust and Institutional confidence: The adoption of CBDCs in developing countries is significantly influenced by trust and institutional confidence. Trust in the technology and the institutions behind CBDCs is crucial for their acceptance and successful implementation. This is particularly important in developing countries where institutional trust may vary widely (Fadli et al., 2023; Søilen & Benhayoun, 2022). Liu et al. (2025) underscored the necessity for comprehensive educational initiatives aimed at enhancing public cognizance regarding digital technologies. Financial institutions may collaborate with governmental entities to inform the populace about the advantages and application of CBDCs.

Institutional trust, particularly in the central bank and government, is essential. A high level of trust in these institutions can stabilize the financial and economic environment, making it conducive for CBDC adoption. The perception of security, privacy, and the non-forgery nature of CBDCs also enhances trust, which is crucial for their acceptance (Sun & Li, 2024).

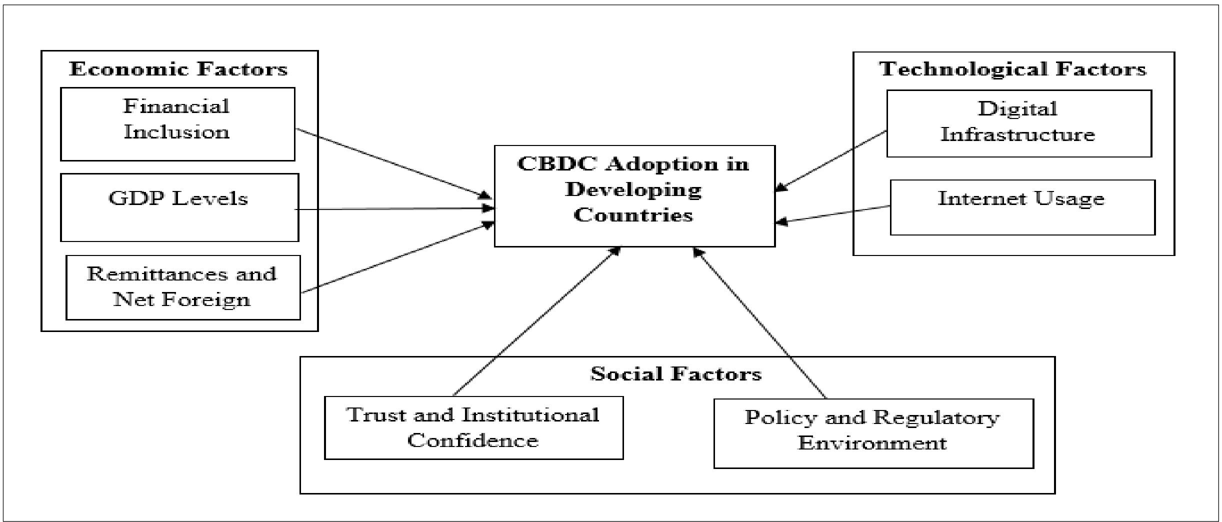

Figure 1. Factors Affecting CBDC Adoption in developing countries

2.5. Motivations Behind CBDC Development in developed countries

The adoption of Central Bank Digital Currencies (CBDCs) in advanced economies constitutes a complex phenomenon shaped by economic, technological, and social determinants as shown in figure 2. Developed nations are progressively investigating CBDCs to augment financial inclusion, enhance payment mechanisms, and uphold monetary sovereignty amidst an increasingly digitized global landscape. The shift towards CBDCs is propelled by the necessity to counteract the diminishing utilization of cash and the emergence of private digital currencies, which introduce challenges to conventional monetary frameworks. This inquiry encompasses pilot initiatives, scholarly research endeavors, and strategic planning to facilitate successful assimilation into pre-existing financial architectures.

Elevated Gross Domestic Product (GDP) levels markedly augment the probability of CBDC adoption, as evidenced in developed nations where economic stability underpins the requisite infrastructure for digital currency implementation. For instance, enhanced GDP levels correlate with a 332.1% increase in the likelihood of active CBDC adoption and a 212.6% increase in pilot adoption (Koparan, 2025). Technological Infrastructure: A higher prevalence of internet access and advanced digital infrastructure is paramount for the adoption of CBDCs. Developed nations endowed with sophisticated technological capabilities are more favorably positioned to deploy CBDCs, as indicated by the 12.7% increase in the likelihood of active adoption coinciding with elevated internet usage (Koparan, 2025).

Developed countries are concentrating on the formulation of exhaustive regulatory structures to address concerns related to privacy, security, and interoperability. For instance, the European

Union's Digital Euro initiative underscores the significance of privacy and strategic autonomy, with aspirations for a potential launch by 2027 (Schumacher, 2024). Strategic Partnerships and Public Awareness: The successful adoption of CBDCs necessitates the endorsement of stakeholders and the cultivation of public awareness. Developed nations are harnessing strategic partnerships and educational initiatives to promote comprehension and acceptance of CBDCs (Kraft, 2024).

As a frontrunner in the realm of CBDC development, China has executed extensive pilot initiatives, engaging 260 million individuals. This endeavor underscores the strategic significance of technological advancement and financial inclusion (Schumacher, 2024; Foo et al., 2024). Sweden's e-Krona is appraising the feasibility and privacy implications of its e-Krona, reflecting the nation's dedication to sustaining financial stability while transitioning towards digital currency (Schumacher, 2024).

The nations like United States and United Kingdom nations are investigating potential implementations of CBDCs, with the United States contemplating a Digital Dollar in light of privacy concerns and the United Kingdom striving to balance accessibility with privacy in its Digital Pound initiative (Schumacher, 2024). CBDCs possess the capacity to enhance financial stability by mitigating leverage and asset-related risks. Nonetheless, the impact is heterogeneous, with retail CBDCs fostering stability while wholesale CBDCs may potentially impede it (Luu et al., 2023). Financial Inclusion: CBDCs present a secure digital payment alternative that can promote financial inclusion, particularly in underbanked locales. Developed nations are prioritizing financial accessibility within their CBDC endeavors (Josyula, 2023; Lekhi, 2024).

2.6. Challenges of CBDC Development in developed countries

While the implementation of CBDCs in advanced economies offers a plethora of opportunities, it concurrently engenders challenges such as heightened financial surveillance and potential disruptions within the banking sector. Apprehensions regarding privacy and the integration of CBDCs into established payment systems necessitate careful consideration to ensure a balanced approach that maximizes advantages while alleviating associated risks.

2.7. Factors influencing CBDC adoption in Developed Countries

The implementation of Central Bank Digital Currencies (CBDCs) within developed nations is contingent upon a multitude of factors, encompassing economic, technological, institutional, and consumer behavioral dimensions or social dimensions as shown in figure 2. These elements collectively delineate the environment for CBDC adoption, mirroring the distinctive challenges and prospects inherent in advanced economies. The subsequent sections will explore these critical factors, drawing upon insights from the referenced scholarly articles.

2.7.1. Economic Factors

Elevated Gross Domestic Product (GDP) levels substantially enhance the probability of CBDC adoption, as they signify a nation’s economic capability to sustain such initiatives. Countries with thriving economies are more inclined to participate in both active and experimental CBDC programs (Koparan, 2025).

Monetary Policy and Financial Stability: CBDCs have the potential to enhance the efficacy of monetary policy by refining transmission mechanisms and supplying real-time data. Nonetheless, they also introduce risks such as bank disintermediation, which could jeopardize financial stability. The architectural design of CBDCs, particularly concerning their remuneration structures, is pivotal in alleviating these risks (Infante et al., 2022)

2.7.2. Technological Factors

Internet Usage

The ubiquity of internet access represents a pivotal technological factor, augmenting the likelihood of CBDC adoption by promoting digital transactions and fostering financial inclusion. Nations characterized by high internet penetration possess a more advantageous position for the effective implementation of CBDCs (Koparan, 2025).

Service Quality

User Experience and Satisfaction: Service quality significantly impacts user satisfaction and the intention to adopt CBDCs. Factors such as ease of use, reliability, and customer support are essential in shaping user perceptions and willingness to transition to digital currencies. Studies have shown that service quality, along with trust and perceived usefulness, plays a crucial role in influencing the adoption of digital currencies like the ECNY (Digital Yuan) (Yang et al., 2025).

Technological Infrastructure: The quality of the technological infrastructure supporting CBDCs is vital. Efficient and seamless transaction processes, coupled with minimal downtime, enhance user experience and trust in the system. The integration of advanced technologies such as blockchain can improve service quality by providing transparency and reducing transaction times (Sun & Li, 2024).

Security Concerns

Cybersecurity Threats: Security is a primary concern in the adoption of CBDCs, as they introduce new vulnerabilities and attack surfaces. The use of blockchain and smart contracts, while offering benefits, also presents unique security challenges that need to be addressed through comprehensive threat modeling and risk management strategies (Hans et al., 2023; Zhang, 2024).

Data Privacy: Protecting user data privacy is critical in the design and implementation of CBDCs. Ensuring that personal and financial information is secure from unauthorized access and breaches is essential for gaining public trust and encouraging adoption (Zhang, 2024).

Central Bank's Role: Central banks must take a proactive role in securing the CBDC ecosystem. This includes not only securing the core design and infrastructure but also collaborating with market participants to establish a secure and resilient financial environment (Zhang, 2024).

2.7.3. Social Factors

Trust and Satisfaction: The trust of consumers in digital currencies and their satisfaction with service quality are crucial determinants in propelling CBDC adoption. Developed nations must address these dimensions to bolster user inclination towards adopting CBDCs (Yang et al., 2025).

Perceived Usefulness: The perceived advantages of CBDCs, including enhanced financial inclusion and transactional efficiency, are instrumental in influencing consumer adoption. Policymakers in developed nations must effectively communicate these benefits to garner public endorsement (Yang et al., 2025).

Regulatory Environment: The regulatory landscape within a given jurisdiction significantly impacts CBDC adoption. Developed nations are tasked with navigating intricate legal and policy hurdles to ensure the alignment of CBDCs with prevailing financial regulations and standards (Wong et al., 2024). A well-defined regulatory framework ensures that service quality standards are maintained, protecting consumers and fostering trust in the system. This includes compliance with Know Your Customer (KYC) and Anti-Money Laundering (AML) regulations, which are crucial for maintaining service integrity and security (Guley & Aleksandrov, 2024).

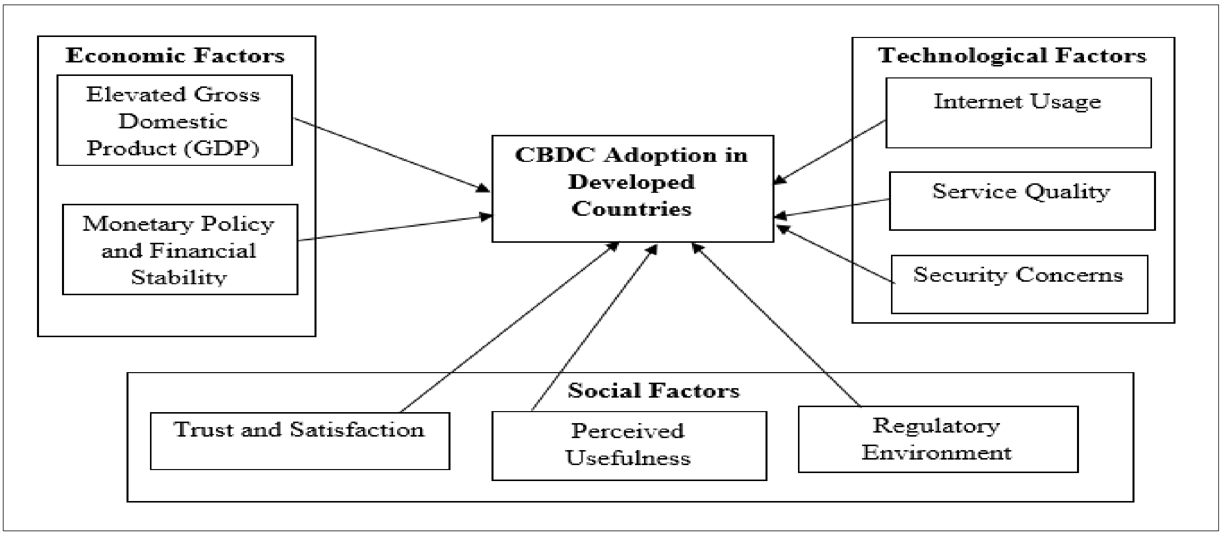

Figure 2. Factors Affecting CBDC Adoption in developed countries

3. Comparative Analysis of Factors Affecting CBDC Adoption across Developing and Developed Countries

The implementation of Central Bank Digital Currencies (CBDCs) exhibits substantial disparities between developing and developed nations, shaped by an array of economic, technological, and regulatory determinants. In developed nations, the emphasis is frequently placed on augmenting the efficiency of financial markets and mitigating privacy-related concerns, whereas developing nations prioritize financial inclusion and economic resilience. This comparative examination investigates these determinants, elucidating the distinct motivations and challenges encountered by each category as shown in Table 1.

3.1. Economic Factors

Developed Countries: Elevated levels of GDP markedly enhance the probability of CBDC adoption, as these nations typically possess greater resources available for investment in digital infrastructure and innovation (Koparan, 2025). Furthermore, developed countries concentrate on improving cross-border transactions, which are essential for the adoption of wholesale CBDCs (Maryaningsih et al., 2022).

Elevated Gross Domestic Product (GDP) levels and sophisticated financial markets within developed nations augment the probability of CBDC adoption. These jurisdictions typically possess well-established digital payment infrastructures, which may diminish the immediate necessity for CBDCs. Nevertheless, they are driven by the prospective enhancement of financial stability and the shift towards predominantly cashless economies (Koparan, 2025; Maryaningsih et al., 2022).

Developing Countries

Financial inclusion serves as a principal impetus, with CBDCs regarded as a mechanism to integrate unbanked populations into the formal financial ecosystem. Nations characterized by lower levels of financial inclusion and larger informal economies exhibit a greater propensity to advance retail CBDC initiatives (Maryaningsih et al., 2022; Koparan, 2025).

Wong et al. (2025) emphasized that by providing a digital currency that is universally accessible to all individuals, irrespective of their socioeconomic status or geographical location, Central Bank Digital Currencies (CBDCs) can serve to mitigate the disparity between the banked and unbanked demographics. Consequently, this may lead to enhanced financial accessibility and engagement, along with greater efficacy in digital transactions.

Conversely, developing nations are propelled by the imperative to foster financial inclusion and economic engagement. Increased internet penetration and favorable financial inclusion metrics substantially elevate the likelihood of CBDC adoption in these areas. Developing countries frequently encounter obstacles such as diminished financial inclusion and extensive informal economies, which retail CBDCs can effectively mitigate (Koparan, 2025; Maryaningsih et al., 2022).

3.2. Technological Factors

Developed Countries

These countries frequently possess sophisticated technological infrastructures, which facilitate the deployment of CBDCs. Increased internet penetration and technological preparedness are positively associated with the adoption of CBDCs (Koparan, 2025). Concerns regarding privacy and regulatory compliance are paramount. For example, the United States and the European Union exercise caution regarding privacy implications, striving to balance accessibility with regulatory frameworks (Schumacher, 2024).

Developing Countries

Although technological infrastructure may be comparatively underdeveloped, the promising prospects for rapid settlement and minimal transaction costs presented by CBDCs are enticing. Nonetheless, challenges persist in ensuring widespread access to requisite technology (Mohammed et al., 2023). The quality of regulations and governance is integral. Nations exhibiting higher levels of democratic governance and public trust in institutions are more inclined to adopt CBDCs (Mohammed et al., 2023). Furthermore, financial sanctions and offshore banking practices may propel CBDC adoption as a strategy to bolster financial stability (Mohammed et al., 2024).

3.3. Social Factors

Developed Countries

The primary focus often revolves around preserving financial stability and nurturing innovation within the extant financial system. CBDCs are perceived as a means to modernize payment systems and enhance economic engagement (Josyula, 2023).

Developing Countries

CBDCs are associated with sustainable development goals (SDGs), with initiatives such as Project Aber in the Gulf region illustrating favorable impacts on SDGs and fostering stakeholder collaboration (Hasan et al., 2023). Financial inclusion and economic empowerment represent pivotal objectives (Koparan, 2025).

The research conducted by Hasan et al. (2023) substantiated the assertion that Central Bank Digital Currency (CBDC) initiatives facilitate stakeholder collaboration, thereby promoting sustainable development endeavors within Gulf nations. Our study enhances the comprehension of the impact of CBDC initiatives on the advancement of Sustainable Development Goals (SDGs) and offers critical insights for policymakers, enterprises, and various stakeholders operating in emerging economies.

Although the determinants impacting CBDC adoption differ between developing and developed nations, there exist shared challenges and opportunities. Both categories must navigate the intricacies of technological, regulatory, and economic environments to achieve successful CBDC implementation. Nevertheless, the focus on financial inclusion in developing nations stands in contrast to the emphasis on privacy and market efficiency in developed nations. This divergence underscores the necessity for bespoke strategies regarding CBDC adoption, taking into account the unique contexts and priorities of each nation.

3.4. Regulatory and Institutional Considerations

Developed Countries: These nations underscore the necessity for thorough research to avert destabilization of pre-existing financial systems. They exercise caution in the introduction of CBDCs, requiring demonstrable advantages over existing financial frameworks. The regulatory environments in developed countries tend to be more rigorous, with a pronounced focus on privacy and security issues (Killingland & Dahl, 2018). Illustrative cases such as Sweden's e-krona and China's e-CNY underscore a focus on technological advancement and financial stability. These nations frequently engage in extensive pilot programs to refine their CBDC constructs prior to full-scale deployment (Josyula, 2023; Kumar & Sikka, 2024).

Developing Countries: Developing nations may exhibit comparatively weaker institutional structures and lower levels of financial stability, complicating the implementation of CBDCs. However, these nations are more inclined to experiment with CBDCs as a means to address challenges such as money laundering and the financing of terrorism, utilizing CBDCs as instruments for economic advancement and the enhancement of financial markets (Le et al., 2025; Killingland & Dahl, 2018). The Bahamas' Sand Dollar and Project Aber in the Gulf region exemplify how developing nations employ CBDCs to advance sustainable development and financial inclusion. These undertakings often entail partnerships with international organizations and concentrate on the realization of Sustainable Development Goals (SDGs) (Hasan et al., 2023; Josyula, 2023).

3.5. Challenges of CBDC Adoption

For developed nations, the paramount challenge lies in reconciling innovation with financial stability. Developed nations must ascertain that CBDCs do not disrupt extant financial systems while concurrently delivering tangible advantages over current digital payment alternatives (Killingland & Dahl, 2018).

In developing countries, CBDCs present considerable prospects for financial inclusion, challenges encompass the establishment of requisite digital infrastructure and the cultivation of public trust in digital currencies. Developing countries must also navigate potential negative ramifications on their financial systems attributable to weaker institutional frameworks (Killingland & Dahl, 2018; Koparan, 2025). Söilen and Benhayoun (2022) emphasized that the initiatives undertaken by banking entities to introduce a versatile and comprehensible currency may facilitate its acceptance solely if these entities concurrently endeavor to cultivate the confidence of households in the currency's framework.

Interoperability with existing payment systems and offline functionality are the major challenges for developing countries in context of CBDC adoption. CBDCs must be interoperable with existing payment systems, both domestically and internationally, to facilitate seamless transactions. This requires significant technological advancements and collaboration between countries. In developed countries, concerns focus on privacy and security, while developing nations may struggle with infrastructure and accessibility. The digital nature of CBDCs makes them susceptible to cyber threats. Ensuring robust cybersecurity measures is crucial to protect against potential breaches and maintain public trust in the digital currency system in the developed countries (Niroula et al., 2024; Liu, 2025).

Table 1. Comparative Analysis of Factors affecting CBDC adoption

Factors	**Developed Countries**	**Developing Countries**

Economic Factors	• Elevated Levels of GDP • Low Interest Rates • Improved Cross-Border Transactions • Financial Stability	• Financial Inclusion • Informal Economy • Sustainable Development
Technological Factors	• Technological Preparedness • Service Quality • Security Concerns	• Digital Infrastructure • Internet Usage
Social Factors	• Public Awareness and Acceptance • Financial Literacy • Perceived Usefulness	• Public Perception • User Trust
Institutional Factors	Institutional Credibility • Regulatory Compliance • Privacy Issues	Institutional Credibility • Economic Development • Financial Market Improvement
Challenges of CBDC Adoption	• Cybersecurity Risks	• Interoperability with existing payment systems • Offline Functionality

4. Conclusions and Implications

The comparative analysis of factors affecting Central Bank Digital Currency (CBDC) adoption across developing and developed countries reveals a complex interplay of economic, technological, and regulatory elements. The systematic literature review highlights that while both types of countries are exploring CBDCs, their motivations and challenges differ significantly. Developed countries often focus on enhancing payment systems and maintaining monetary sovereignty, whereas developing countries emphasize financial inclusion and economic resilience.

While the adoption of CBDCs presents numerous opportunities, it also poses challenges that must be addressed. For instance, the potential disruption to commercial banking and the need for new regulatory frameworks are significant concerns. Additionally, the varying levels of technological readiness and financial literacy across countries can impact the effectiveness of CBDC implementations. Therefore, a one-size-fits-all approach is unlikely to succeed, and strategies must be tailored to the specific needs and conditions of each country.

The implications of CBDC adoption include economic growth, financial inclusion, and challenges related to privacy, security, and regulatory complexities, which may vary between developed and developing contexts. The adoption of Central Bank Digital Currencies (CBDCs) across developing and developed countries presents a complex landscape with varied implications. CBDCs, as government-backed digital alternatives to traditional fiat currencies, are being explored by numerous countries to address the growing demand for digital payments and to enhance financial inclusion. This study highlighted that the success of CBDC adoption depends on the technological readiness and regulatory frameworks of individual countries, highlighting the need for tailored strategies that consider the unique economic and institutional contexts of each nation.

It is essential to consider that the successful implementation of CBDCs requires a collaborative approach involving multiple stakeholders, including governments, financial institutions, and the public, to ensure that the benefits of digital currencies are realized without compromising existing financial stability and privacy standards for both developed and developing countries.

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