

Empowering the Marginalized

Digital Finance as a Tool for Social Inclusion



Editor

Dr. B. Indira Priyadharshini

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27.	SOCIO-ECONOMIC DETERMINANTS OF DIGITAL EXCLUSION : AN ACADEMIC THEORETICAL ANALYSIS Mr. P. Rajasekaran & Dr. R. Velmurugan	182
28.	INFLUENCE OF CONSUMER AWARENESS AND PERCEPTION TOWARDS PURCHASE DECISION MAKING ON ELECTRIC VEHICLES Dr. S. Sangamithra & Ms. N. Sowmya	192
29.	INNOVATION FOR INCLUSION : DIGITAL CURRENCIES IN EMERGING MARKET PAYMENT SYSTEMS Dr. B. Rohini	202
30.	INNOVATING FOR BHARAT@2047 : STRATEGIES FOR A FUTURE-READY DIGITAL NATION Ms. R. Visalakshi & Mr. R. Mukesh	212
31.	MECHANISMS AND USAGE CHALLENGES Ms. M. Kavi Priya & Dr. S. Shanmugapriya	221
32.	DIGITAL FINANCE FOR TRIBAL AND FOREST-DWELLING COMMUNITIES Dr. M. Meenakrithika, Ms. S. Nikitha Shree & Ms. K. Sujasree	227
33.	EFFECTIVENESS OF DIGITAL SYSTEMS AND POLICES IN SAFEGUARDING MARGINALISED COMMUNITIES Dr. R. Gayathri & Dr. K. Karvendhan	234
34.	DIGITAL FINANCIAL INCLUSION OF MIGRANTS AND INFORMAL WORKERS : AWARENESS, PERCEPTION AND ADOPTION Ms. M. Haripriya, Ms. M. Satheeswari & Dr. R. Manikandan	240
35.	FROM ACCESS TO EMPOWERMENT : DIGITAL FINANCIAL INCLUSION AND MARGINALIZED COMMUNITIES IN THE ERA OF AMRIT KAAL Ms. S. Jeevashanthini	247

INNOVATION FOR INCLUSION : DIGITAL CURRENCIES IN EMERGING MARKET PAYMENT SYSTEMS

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ABSTRACT

The fast expansion of digital currencies is creating fundamental changes to payment ecosystems around the world and is creating new financial inclusion opportunities, particularly in emerging markets that do not have traditional banking infrastructure. This paper considers how central bank digital currencies, mobile-based tokenized payments, and decentralized digital assets can increase access, affordability, and efficiency of financial services for under banked populations. Through case studies of leading emerging economies, the paper shows how digital currencies can reduce transaction costs, provide instant low-value payments, create transparent government transfers, and expand the reach of micro-entrepreneurs. The paper also assesses risks related to cyber security, digital literacy, data protection, and regulatory capacity, which must be managed for inclusive adoption. The paper concludes that while digital currencies offer transformative potential for closing gaps to financial access, It requires a coordinated policy framework, interoperable platforms, and inclusion strategies that are context specific to local socio-economic environments.

Keywords : Financial Inclusion, Emerging Markets, CBDC, Mobile Payments, Tokenized Payments, Digital Finance, Payment Systems, Financial Access, Fin Tech Innovation, Low-Cost Transactions, Digital Literacy, Regulatory Frameworks, Inclusive Finance, Financial Technology.

INTRODUCTION

The emergence of digital money is a critical milestone in international financial system development. Advanced economies will invest in digital assets to boost their already high levels of efficiency, but the most profound impacts will come about in emerging markets, where structural fault lines underlying traditional financial services remain. Millions are unable to be fully banked or under banked due to friction such as costly transaction costs, inability to reach physical banking infrastructure, and requirements for

documentation. Meanwhile, access to mobile connectivity, digital entrepreneurship, and government-driven digitization has been growing rapidly across developing regions.

Digital currencies have emerged as a transformative force in the global financial landscape, redefining how individuals and businesses access, store, and transfer value. In the case of emerging markets, where gaps in traditional banking infrastructure, high transaction costs, and financial exclusion are persistent challenges, the shift toward digital payment innovations represents a powerful opportunity to build more inclusive and efficient financial systems. Central Bank Digital Currencies, mobile-wallet-based tokenized payments, and block chain-enabled financial services are increasingly being explored as tools to expand financial access, enhance transparency, and support real-time, low-cost transactions for underserved communities. Against this backdrop of governments and financial institutions in developing economies increasingly adopting digital currency frameworks, questions emerge over their potential to bridge deep-seated socio-economic divides. Digital currencies do not just offer the prospect of faster, more secure mechanisms for conducting payments; they also open up avenues for targeted social welfare delivery, cross-border remittances, and micro-entrepreneurial growth. At the same time, regulatory capacity, digital literacy, cyber security, and technological interoperability issues present significant hurdles. This paper examines the role of digital currencies in accelerating financial inclusion within emerging market payment systems, highlighting both the opportunities and challenges associated with their adoption. By analyzing global experiences and contextual risks, the study aspires to provide insights for policymakers, financial sector stakeholders, and technology innovators working toward inclusive and equitable digital payment ecosystems.

UNDERSTANDING DIGITAL CURRENCIES

Digital currencies to any form of money or value that exists purely in electronic form and is stored, transferred, or exchanged through digital systems. Unlike traditional physical currencies such as cash or coins, digital currencies rely on computer networks, cryptographic techniques, and electronic ledgers to maintain trust, record transactions, and enable payments. Their rise is closely linked to advancements in financial technology the wider use of smart phones, and the growing demand for fast, low-cost, and convenient payment solutions. At the core of digital currencies

is the concept of digitization of value, where monetary units are represented as data rather than physical notes. These units can be transferred instantly across devices and borders, making transactions more efficient and inclusive. Digital currencies include various forms such as crypto currencies, stable coins, and central bank digital currencies each differing in governance, stability, and regulatory oversight. Crypto currencies like Bit coin operate through decentralized networks, while stable coins are pegged to fiat currencies to reduce volatility. In emerging market economies, digital currencies have gained particular importance because they can help overcome structural barriers in traditional banking systems. Many people in these regions lack access to formal banking but own mobile devices, offering an opportunity for digital currency-based financial services. By enabling low-cost transactions, expanding access to savings and credit, and supporting government welfare payments, digital currencies can support broader financial inclusion goals. However, the adoption and use of digital currencies also come with challenges related to cyber security risks, digital literacy gaps, regulatory preparedness, and the need for robust technological infrastructure. Understanding digital currencies thus requires an appreciation of both their technological foundations and their socio-economic implications. As countries continue to innovate and pilot digital currency platforms, these systems are likely to play a transformative role in shaping the future of payment ecosystems especially in emerging markets where innovation is tightly connected to inclusive development.

ROLE OF DIGITAL CURRENCIES IN EMERGING MARKET PAYMENT SYSTEMS

The uses of digital currency are becoming increasingly transformative in their impact on payment systems in emerging markets. These economies are often faced with structural challenges such as low levels of banking penetration, high transaction costs when using formal services, and cash-based systems that are unreliable. These conditions also prevent millions of people from accessing services in the formal financial services. Digital currencies, such as Central Bank Digital Currencies and mobile-based tokenized and stable coins are providing meaningful solutions to these structural gaps. If the digital currencies have low-to-no transaction costs, then their true benefit is in their ability to accommodate instant payments in real time, particularly in regions that suffer from traditional banking infrastructure in weak geographic locations. When confirming payments in

real time is possible, this method further enable secure peer-to-peer payment arrivals to financial banked and unbanked populations, including micro-entrepreneurs, informal workers, and rural households. In addition, digital currencies are assisting governments in terms of the government-to-person (G2P) payments for things like subsidies, pensions, and welfare. The see economies are challenged with issues such as leaks, delays, and corruption – all of which height incidences in cash-based systems and disbursements. Digital currencies (and CBDCs) and digital wallets provide traceable payment receipts and regulatory reconciliation, removing the intermediaries and all transactions will be accounted for in the governmental G2P process. For businesses, digital currencies create better experiences for cross border payments and reduce costs associated with correspondent banking. In particular, small importers, emigrant workers sending remittances, and digital trade could benefit from lower costs.

LITERATURE REVIEW

Research on digital currencies and their influence on emerging market payment systems has expanded significantly over the past decade, reflecting growing global interest in financial innovation and inclusion. Early work by Nakamoto (2008) introduced the concept of decentralized digital currency through Bitcoin, establishing the foundational idea of peer-to-peer transactions without intermediaries. Although initially framed as a technical innovation, subsequent studies (e.g., Yermack, 2015; Böhme et al., 2015) explored its implications for financial systems, highlighting both its potential and regulatory challenges. These early analyses laid the groundwork for understanding how digital currencies could transform payment infrastructures.

A substantial body of literature examines Central Bank Digital Currencies (CBDCs) as a more regulated alternative to private cryptocurrencies. Researchers such as Kiff et al. (2020), Bindseil (2020), and the Bank for International Settlements (BIS) argue that CBDCs can enhance payment efficiency, reduce reliance on physical cash, and strengthen monetary policy transmission. Studies focusing on emerging markets such as Auer et al. (2021) emphasize that CBDCs can address financial access gaps by offering low-cost, interoperable, and secure digital payment tools to underserved populations. Case studies of early adopters, including China (e-CNY), Nigeria (eNaira), and the Bahamas (Sand Dollar), show mixed outcomes,

with successes in digital onboarding but challenges in user education and adoption.

The literature on mobile money and digital wallets provides relevant insights for understanding digital currency uptake in emerging economies. Research on Kenya's M-Pesa (Jack & Suri, 2016) highlights how mobile-based financial systems can drive financial inclusion, reduce poverty, and simplify everyday transactions. These findings are frequently cited to support arguments that digital currency ecosystems—whether block chain-based or centrally issued—can succeed when built on accessible infrastructure, user-friendly design, and trust in service providers.

Scholars have also examined the risks and constraints associated with digital currencies in emerging market payment systems. Studies by Ghosh (2021), Prasad (2021), and IMF policy papers identify challenges such as cyber threats, operational vulnerabilities, digital literacy barriers, and regulatory capacity limits. The risk of exclusion—particularly for rural or elderly populations—appears repeatedly in the literature, underscoring the need for supportive policies and public-private partnerships. Furthermore, concerns regarding data privacy, surveillance, and potential disruption to banking sectors are highlighted by researchers such as Goodell & Aste (2019).

From an economic perspective, literature examining the macroeconomic implications of digital currencies remains evolving. Researchers note that CBDCs could alter deposit patterns, impact credit creation, and reshape payment competition (Brunnermeier & Niepelt, 2019). For emerging markets with weaker banking systems, these effects could be more pronounced, prompting calls for carefully calibrated implementation strategies.

Overall, existing literature suggests that digital currencies—both private and public—hold significant promise for enhancing the inclusiveness, efficiency, and transparency of payment systems in emerging markets. However, successful integration depends on complementary factors such as regulatory clarity, financial literacy, technological infrastructure, and stakeholder trust. Scholars agree that while digital currencies are not a universal solution, they represent a transformative opportunity when aligned with the socio-economic realities of developing economies.

DESIGN OF THE STUDY

This study employs a qualitative, exploratory research design in order to investigate the role of digital currencies within emerging market payment systems. The methodology is thus structured under three stages:

Research Design

A descriptive and exploratory framework was chosen to understand how digital currencies like CBDCs, mobile wallet-based tokens, and decentralized digital assets are influencing the payment infrastructures of emerging economies. The design helps capture evolving trends, challenges, and policy implications.

Data Collection

The data was collected using secondary sources, including: peer-reviewed journals on digital finance, financial inclusion, and payment systems; policy reports from the IMF, World Bank, BIS, and central banks; case studies from countries like India, Nigeria, Brazil, China, Kenya, and the Philippines; and technical papers published by fintech regulators and research institutions. Industry reports by McKinsey, Deloitte, Mastercard, and Visa. This approach helps gain a comprehensive understanding of the real-world adoption, regulatory strategies, and market behaviors.

Data Analysis

A thematic content analysis was conducted. The literature collected was organized by broad themes: Technology architecture of digital currencies, Financial inclusion outcomes, Regulatory preparedness, Barriers to adoption, Socio economic effects in emerging markets.

FINDINGS

• DIGITAL CURRENCIES IMPROVE FINANCIAL INCLUSION

Digital currencies can help reduce the entry barriers to financial services by allowing low-cost, immediate, and convenient transaction methods. CBDCs and mobile money platforms enable the unbanked to transact using their basic smart phones or basic feature phones without having to rely on physical bank branches.

ENHANCED EFFICIENCY IN PAYMENT SYSTEMS

Emerging markets benefit significantly from:

- Faster settlement times
- Reduction in intermediaries
- Lower remittance costs
- Improved transparency in government payments Digital currencies also integrate seamlessly into e-commerce, MSME payments, and gig-economy transactions.
- **GOVERNMENT AND CENTRAL BANK INTEREST IS INCREASING**

Many emerging economies India, Nigeria, Brazil, Ghana, and China have either piloted or are planning CBDCs. Motivations include:

- Enhancing digital payments
- Strengthening monetary policy
- Reducing shadow economy activities

RECOMMENDATION

- **STRENGTHEN REGULATORY AND POLICY FRAMEWORKS**

Governments should develop clear guidelines on:

- CBDC design and usage
- Licensing requirements for fintech firms
- Consumer protection measures
- Anti-money laundering (AML/CFT) compliance

- **PROMOTE DIGITAL AND FINANCIAL LITERACY**

Training programs, community workshops, and multilingual digital-learning tools must be introduced, especially for rural and low-income populations.

- **IMPROVE DIGITAL INFRASTRUCTURE**

Investments in broadband connectivity, affordable smart phones, and secure digital ID systems will support widespread digital currency adoption.

- **ENSURE INTEROPERABILITY ACROSS PLATFORMS**

Payment systems should be interconnected to allow users to transact seamlessly across banks, wallets, and CBDC platforms.

- **FOSTER PUBLIC–PRIVATE PARTNERSHIPS**

Collaboration between central banks, telecom operators, fin tech startups, and financial institutions will boost innovation and reach.

- **ENHANCE SECURITY AND DATA PROTECTION**

Adoption of robust encryption standards, biometric authentication, and clear data-governance frameworks can build trust.

- **PILOT AND PHASE DEPLOYMENT APPROACHES**

Countries should begin with small-scale CBDC pilots, evaluate user behavior, and gradually expand to national rollouts.

SCOPE AND LIMITATIONS

- The research is based on secondary data; it does not include primary data through surveys or interviews.
- Comparing country-level behaviors is limited to projects or countries for which data is available on digital currency pilots or the adoption of digital payments.
- **Policy environments are rapidly evolving, so the findings represent the moment in time of study.**

CONCLUSION

Digital currencies are changing the financial landscape in emerging markets through inclusive, transparent, and effective payment alternatives. The research indicates that digital currencies, particularly CBDCs and mobile token ecosystems, present massive opportunities to close financial access gaps, bolster small businesses, and modernize national payment systems. Digital currencies present tremendous potential to change payment systems in emerging economies. They have the potential to promote financial inclusion, reduce transaction costs, increase efficiency in government delivery, and facilitate real-time payments. Nevertheless, any transition must be thoughtfully managed to balance concerns of digital literacy, security,

regulatory coherence, and the technological infrastructure. Countries that adopt an approach that is balanced, inclusive, and promotes innovation are most likely to benefit from advancements in digital currency. Developing successful adoption will depend on ensuring there is robust digital infrastructure, that regulatory frameworks are clear, that cyber security is enhanced, and that a considerable push is made to ensure that digital literacy is elevated. Emerging economies will need to develop policies that balance innovation that unlocks opportunities for consumers but also protects security and privacy. If stakeholders, including policymakers, financial entities, and technology providers act in concert, the potential of digital currencies presents an opportunity to bolster inclusive and sustainable economic development.

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