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The Adoption Paradox: Cryptocurrency Regulation, Virtual Digital Asset Taxation, and Financial Inclusion in India

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ABSTRACT

India maintains its position as the central hub which has driven cryptocurrency from its initial experimental phase into a global financial revolution. India leads the world in blockchain adoption because it has 119 million crypto users, which makes it the top country for blockchain adoption. The nation enforces a 30 percent flat tax on Virtual Digital Asset earnings. This does not allow taxpayers to reduce their tax burden through loss deductions while it also requires a 1 percent Tax Deducted at Source. The paper analyzes how India has developed its regulatory framework and studies the Finance Act 2022 tax system impacts, and Digital Rupee expansion, and Web3 startup network, and decentralized finance potential for financial inclusion in India. The study shows that India allows about 60 percent of cryptocurrency transactions to occur outside its borders because of its current regulatory system, which is based on information from RBI publications and government policy documents, and Supreme Court rulings, and IMF and FATF reports, and Chainalysis and CoinSwitch industry data, and financial journalism until early 2026. The paper demonstrates that India requires a single regulatory framework, which provides fairness and clarity, and future-oriented guidance to achieve its digital asset economy potential.

Keywords: Cryptocurrency, Virtual Digital Assets, Digital Rupee (CBDC), Financial Inclusion

INTRODUCTION AND LITERATURE REVIEW

Introduction

Financial systems throughout history have reflected the technological advancements and social structures which existed during their creation. The evolution of value exchange systems began with barter systems and continued through metal coins and paper currency before digital banking emerged because of technological advancements and economic requirements. The creation of cryptocurrency brought about a complete transformation in financial systems because it operates as digital money which uses cryptographic protection. It runs on blockchain networks that do not require government or central bank involvement. The first cryptocurrency to appear was Bitcoin which Satoshi Nakamoto introduced in 2009. Since that time numerous digital currencies have appeared, which include Ethereum, Ripple, and multiple stablecoins that deliver unique functionalities and technological advancements.

In the Indian context, the conversation around cryptocurrency is particularly compelling. The financial system of India which supports 1.4 billion people and operates as the fifth-largest global economy has achieved significant progress through its Unified Payments Interface (UPI) system. Many people in the population do not have access to banking services, or their banking needs are not sufficiently met. The Indian government together with the Reserve Bank of India (RBI) have maintained an unstable relationship regarding cryptocurrency operations because the RBI prohibited regulated entities from providing services to crypto businesses in 2018 until the Supreme Court overturned this decision in 2020. The Finance Act of 2022 established a 30 percent flat tax rate for Virtual Digital Asset (VDA) gains and implemented a 1 percent TDS requirement. This indicates

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that cryptocurrency exists despite the unclear regulatory framework. The research investigates India's present situation together with its future development direction.

Literature Review

The academic research on cryptocurrency began when Nakamoto published his 2008 white paper which introduced Bitcoin as a decentralized electronic payment network. Böhme et al. (2015) conducted fundamental research which explained Bitcoin operations and its various regulatory issues. Yermack (2015) studied Bitcoin to determine if it functioned as a conventional currency but discovered its unpredictable price made it unsuitable for payment transactions. Catalini and Gans (2016) demonstrated that blockchain technology would decrease verification and networking expenses. This would create major changes for financial intermediation operations. The stablecoin market reached a value above $250 billion during 2025. The United States Bitcoin ETFs currently handle assets which range from $150–$170 billion.

India's involvement with cryptocurrency emerges from its distinct population characteristics together with its advanced technological infrastructure. The Chainalysis 2024 Global Crypto Adoption Index shows that India ranked first in the world for adoption of crypto for two consecutive years. Approximately 119 million Indians own cryptocurrency, with 72 percent of investors under the age 35 (CoinSwitch Q2 2025 Report). The platform now receives more than 75% of its activity from cities which belong to Tier 2, Tier 3, and Tier 4 categories, while Uttar Pradesh leads with 13 percent. Maciejasz et al. (2024) found that younger users became more receptive to digital financial services during the COVID-19 pandemic.

India's regulatory history is among the most complex globally. The Supreme Court ruled against the RBI banking prohibition of 2018 through its Internet and Mobile Association of India v. RBI (2020) decision. This determined that the ban violated the constitutional right to trade under Article 19(1)(g).

The Finance Act 2022 established a 30 percent flat tax and 1 percent TDS on cryptocurrencies as VDAs, which led to a decrease in domestic exchange activities by 50–70 percent. The FATF's 2024 assessment of India concluded that the country was still in early stages of crypto AML compliance. The European Union finished its MiCA implementation during December 2024, but the United States established its first federal stablecoin framework through the GENIUS Act.

The RBI launched its Digital Rupee pilot in 2022, expanding to 17 banks with over 6 million active users and circulation growing 334 percent to ₹1,016 crore by March 2025. The Atlantic Council's CBDC Tracker reports that 137 countries representing 98 percent of global GDP are exploring CBDCs.

The research of El Hajj and Farran (2024) demonstrates that cryptocurrency adoption significantly and positively influenced financial inclusion in the emerging markets. Setyawan et al. (2024) identifies that reducing transaction costs and faster settlement as key benefits. The study by Kyaw (2025) identified three barriers including regulatory uncertainty, digital literacy gaps, and infrastructure deficits. Le (2025) using a New Keynesian DSGE model, demonstrated that cryptocurrency plays a crucial role in banking sectors of emerging economies.

Research Gap, Questions, and Objectives

Research Gap

Despite the growing body of literature on cryptocurrency in India, several significant gaps remain. Most existing research focuses narrowly on individual aspects regulation, technology, or market data without integrating them into a single analytical framework. The rapid pace of regulatory change in 2024–2026, including the FIU's enforcement actions, the Digital Rupee's expansion, and the Orissa High Court's demand for legal clarity, has not been adequately synthesized in accessible academic literature. Furthermore, the geographic democratization of India's crypto market and the paradox of mass adoption alongside punitive regulation have not been systematically analyzed.

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Research Questions

1. How has India's regulatory framework particularly the Finance Act 2022 impacted domestic cryptocurrency adoption and market behaviour?

2. What role can cryptocurrency and blockchain technology play in advancing financial inclusion and economic development in India?

3. How does India's regulatory approach compare with global frameworks, and what is the most likely trajectory for the coexistence of the Digital Rupee and private cryptocurrencies?

Research Objectives

1. To examine the evolution, current state, and real-world impact of India's cryptocurrency regulatory framework on market participation and trading behaviour.

2. To evaluate the opportunities that cryptocurrency and blockchain technology present for financial inclusion, remittance efficiency, and economic innovation in India.

3. To assess India's regulatory approach within a global comparative context and propose evidence-based recommendations for a balanced regulatory framework.

RESEARCH METHODOLOGY

Research Design

This study follows a descriptive and analytical research design with a qualitative orientation. A descriptive design is used to accurately portray the current state of cryptocurrency in India, while the analytical component examines underlying causes, implications, and policy directions. The study does not test a statistical hypothesis but takes an interpretive approach, drawing on a wide range of secondary sources to build a coherent, evidence-based argument about cryptocurrency's role in India's financial future.

Data Collection

All research in this study depends on secondary data which consists of previously gathered and published information by other researchers and institutions. The research team selected secondary data because the subject matter contains extensive documentation from official institutional sources and official documents and expert analysis provide the best understanding of the fast-evolving regulatory landscape and the research requires demonstration of advanced knowledge synthesis through critical evaluation of existing information.

Research data was collected from five different sources which included (a) official government and regulatory publications from the RBI, Ministry of Finance, FIU India, and Supreme Court judgments; (b) international institutional reports from the IMF, World Bank, FATF, and Atlantic Council; (c) industry and market research from Chainalysis, CoinSwitch, and Statista; (d) peer-reviewed academic journals from Google Scholar, SSRN, ScienceDirect, and MDPI; and (e) credible financial journalism from the Economic Times, LiveMint, Bloomberg, and Reuters for recent developments not yet captured in academic literature.

Mode of Collection

The study began by surveying the broader cryptocurrency literature globally, then narrowed the focus to India specifically. Searches used keyword combinations such as "cryptocurrency India," "crypto regulation India," "Digital Rupee CBDC," and "blockchain financial inclusion." The sources were filtered to prioritize publications from 2019 to early 2026. Each source was evaluated against four criteria: credibility, relevance, recency, and consistency through cross-referencing.

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Analytical Approach

The analysis is thematic and comparative. Thematic analysis identified recurring patterns regulatory uncertainty, the adoption paradox, financial inclusion potential, CBDC development, and global positioning organized into coherent themes. The comparative dimension places India's policy alongside the US, EU, China, Singapore, and Hong Kong. As a qualitative, secondary-data study, no statistical techniques such as regression or hypothesis testing were employed; instead, the study uses interpretive synthesis, policy comparison, and evidence triangulation as its core analytical methods.

Analysis And Interpretation

Analytical Technique

Thematic content analysis alongside comparative policy analysis was employed to examine the data. This involved reading across regulatory documents, market reports, academic papers, and institutional publications, then identifying recurring patterns that spoke to the research questions. A quantitative approach would not have been appropriate here. The material is too varied in format and purpose for statistical testing, and thematic analysis provided the flexibility needed to draw meaning from sources ranging from RBI circulars to exchange white papers.

Market Analysis

India's cryptocurrency market is valued at approximately $3–4 billion in 2025 and projected to reach $14.2 billion by 2034 (CAGR of 18.65 percent). On-chain transaction volumes reached $2.36 trillion between July 2024 and June 2025, a 69 percent year-on-year increase. Over 52 percent of activity involves actual value transfers rather than speculation. Bitcoin dominates at 33 percent of holdings, followed by Ethereum and other Layer 1 assets at 35.52 percent. The demographic profile 72 percent under 35, 75 percent from Tier 2–4 cities reveals a financial phenomenon that has penetrated India's heartland.

Regulatory Impact

The Finance Act 2022's VDA framework produced outcomes directly contrary to its objectives. The 30 percent flat tax with no loss offsets creates economically irrational situations: an investor who gains ₹5 lakh on Bitcoin and loses ₹4 lakh on Ethereum pays ₹1.5 lakh in tax on the Bitcoin gain alone an effective rate of 150 percent on the net gain of ₹1 lakh. The 1 percent TDS, applied to transaction value rather than gains, rendered high-frequency trading unviable on domestic platforms. Approximately 60 percent of Indian crypto transactions now flow through offshore platforms, meaning the government collects less revenue and exercises less oversight than a rational framework would produce.

Challenges

The analysis identifies five critical challenges. The absence of a standalone crypto law is the most fundamental, causing approximately 60 percent of Indian Web3 startups to incorporate abroad. Cybersecurity vulnerabilities remain serious the WazirX hack of July 2024 resulted in $234 million in losses from a single wallet holding 45 percent of customer funds. Fraud, Ponzi schemes, and celebrity-endorsed token promotions prey on financially inexperienced participants in smaller cities. The structural tax disadvantage means an investor with zero net gain can still owe substantial taxes. Finally, the financial literacy gap remains wide most retail investors enter through peer recommendations rather than informed analysis.

Opportunities

Four key opportunity areas emerge. First, crypto-based remittance channels can reduce fees from 3–7 percent to under 1 percent on India's $125+ billion annual remittance inflows, potentially saving households $2 billion per year. Second, India's Web3 ecosystem over 1,250 startups, $653 million in 2025 funding, growing at 42 percent annually is projected to become the world's largest Web3 developer hub by 2028, with India accounting for 12

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percent of global Web3 developer contributions. Third, the Digital Rupee's programmability features enable purpose-driven welfare disbursements that could reduce leakage in subsidy delivery. Fourth, cryptocurrency provides accessible portfolio diversification, with Bitcoin's low correlation to the Nifty 500 offering risk-reduction benefits and minimum investments as low as ₹100.

The Future: Coexistence

The evidence points toward a future defined by coexistence rather than competition between the Digital Rupee and private cryptocurrencies. The Digital Rupee serves purposes requiring state backing monetary sovereignty, welfare delivery, and regulated cross-border settlement while private cryptocurrencies provide permissionless global investment access, censorship-resistant value transfer, and decentralized financial applications. The 119 million Indians holding cryptocurrency are not rejecting the rupee; they are supplementing their financial life with capabilities it cannot offer.

FINDINGS AND CONCLUSION

Key Findings

This research yields five principal findings. First, India is the world's largest retail crypto market with 119 million participants driven by organic grassroots adoption. Second, India's regulatory framework is failing the punitive tax structure has pushed 60 percent of trading offshore while 60 percent of Indian Web3 startups have incorporated abroad. Third, cybersecurity and investor protection gaps are serious, as demonstrated by the WazirX hack ($234 million) and the absence of mandatory custody standards. Fourth, the opportunities are real and time-sensitive India's Web3 sector, remittance efficiency gains, and Digital Rupee innovation represent genuine pathways to global leadership. Fifth, the future will be defined by coexistence between the Digital Rupee and private cryptocurrencies, as they serve fundamentally different purposes.

CONCLUSION

What comes through clearly in the evidence is that India's monetary future is not going to be a clean either-or between traditional finance and decentralized currencies. The real question is regulatory. India already has 119 million crypto users, the second-largest Web3 developer ecosystem globally, and public digital infrastructure Aadhaar, UPI, and Digital Rupee that gives it a head start most countries do not have. The bottleneck is policy. There is still no standalone crypto law, the tax structure actively discourages participation, and investor protections are minimal. These are solvable problems, but they have gone unsolved for years, and the longer that continues, the wider the gap grows between what India's crypto ecosystem could be and what it is.

RECOMMENDATIONS, LIMITATIONS, AND SCOPE

Recommendations

The government should pass a standalone cryptocurrency law defining VDA's legal status, establishing licensing requirements, and creating investor protection mechanisms. The VDA tax structure should be reformed to allow loss offsets, differentiate between short-term and long-term holdings, and reduce TDS from 1 percent to 0.01 percent. The RBI should accelerate Digital Rupee development with UPI integration and scale programmability for welfare delivery. A formal inter-regulator coordination mechanism among the RBI, SEBI, Ministry of Finance, and FIU should resolve jurisdictional ambiguity. The crypto industry should adopt mandatory proof-of-reserves and asset segregation standards and invest in regional-language financial literacy. Individual investors should limit crypto allocation to 5–10 percent of investable assets, use only FIU-registered exchanges, and understand their tax obligations.

Limitations of the Study

This study has several limitations. Firstly, it relies entirely on secondary data and does not capture the lived

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experiences of retail investors through primary surveys or interviews. Second, the rapidly evolving regulatory environment means some developments may have occurred after the data collection period. Third, the reliance on English-language sources may underrepresent perspectives from regional media and community-level discussions about crypto adoption in rural India.

Scope of the Study

This study focuses on the Indian context covering developments from 2018 to early 2026. While global comparisons are referenced, the primary lens remains in India. The study encompasses cryptocurrency adoption patterns, regulatory evolution, the Digital Rupee initiative, financial inclusion potential, Web3 ecosystem development, and comparative global regulatory analysis. Future research should incorporate primary data from Tier 2–4 city investors, economic modelling of alternative tax structures, and longitudinal analysis of Digital Rupee–private cryptocurrency coexistence dynamics.

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