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CRYPTOCURRENCY ADOPTION ACROSS ECONOMIES: A COMPARATIVE ANALYSIS OF MACROECONOMIC, TECHNOLOGICAL, REGULATORY, AND INSTITUTIONAL DETERMINANTS

Zrinka Lacković Vincek

PhD, Associate professor, University of Zagreb Faculty of Organization and Informatics,
Varaždin, Croatia, zlackovi@foi.unizg.hr; ORCID ID: 0000-0002-8055-5481

Vladimir Kovšca

PhD, Full professor, University of Zagreb Faculty of Organization and Informatics,
Varaždin, Croatia, vladimir.kovsca@foi.unizg.hr; ORCID ID: 0000-0001-7212-2558

Suzana Keglević Kozjak

PhD, Assistant professor, University of Zagreb Faculty of Organization and
Informatics, Varaždin, Croatia, skozjak@foi.unizg.hr; ORCID ID: 0000-0003-1931-9161

Abstract: *This paper examines the determinants of cryptocurrency adoption across developed and emerging economies with the objective of identifying the key economic, technological, institutional, and regulatory factors influencing digital financial market development. The research is based on a structured literature review methodology that includes recent scientific publications, institutional reports, and industry analyses related to cryptocurrencies, blockchain technologies, stablecoins, and decentralised finance (DeFi). The study analyses how macroeconomic instability, technological readiness, institutional trust, and regulatory frameworks shape cryptocurrency adoption across countries and regions. The findings indicate that cryptocurrency adoption is particularly significant in economies affected by inflation, currency instability, and limited access to traditional financial services, where cryptocurrencies and stablecoins increasingly function as alternative financial mechanisms and payment solutions. In contrast, developed economies demonstrate stronger institutional participation, more advanced digital infrastructure, and clearer regulatory frameworks supporting cryptocurrency market integration. The study also highlights the growing importance of stablecoins, DeFi systems, and international regulatory initiatives in shaping contemporary digital financial ecosystems. The paper concludes that cryptocurrency adoption is strongly influenced by the interaction of macroeconomic conditions, technological development, institutional trust, and regulatory readiness, which together explain substantial regional differences in global digital financial transformation.*

Keywords: *cryptocurrency adoption, macroeconomic factors, technological readiness, regulatory frameworks, institutional trust*

JEL Classification: *E42, G15, G28, O33*

INTRODUCTION

The rapid advancement of digital technologies and the globalization of financial markets have accelerated the adoption of cryptocurrencies across developed and emerging economies (Bhimani et al., 2021). Cryptocurrencies are decentralized digital assets that enable transactions, fund transfers, and value storage through blockchain-based systems without direct control from central banks or governments (Alqaryouti et al., 2020). Although cryptocurrencies are often associated with speculative investment behaviour and high market volatility (Panetta, 2023), their increasing adoption suggests that their role is expanding toward broader financial and economic applications.

The emergence and expansion of cryptocurrencies are closely linked to financial instability and technological transformation. The global financial crisis of 2008 weakened confidence in traditional financial institutions and stimulated interest in decentralized financial systems based on technological innovation (Rejeb et al., 2021). In this context, Satoshi Nakamoto introduced *Bitcoin: A Peer-to-Peer Electronic Cash System* in 2008, presenting Bitcoin as the first decentralized peer-to-peer payment system (Nakamoto, 2008). Over time, cryptocurrencies evolved into a global financial phenomenon supported by the transformative potential of blockchain technology, which enables decentralized transaction validation, transparency, and enhanced cybersecurity within digital ecosystems (Mbaye, 2021). Blockchain is therefore increasingly recognized as a disruptive innovation capable of reshaping financial services and broader business models (Chen et al., 2022).

Cryptocurrency markets expanded further during the COVID-19 pandemic, which accelerated the digitalization of economic and social activities worldwide. Increased market volatility and uncertainty stimulated interest in alternative financial assets, including cryptocurrencies (Pelagidis & Kostika, 2022; Apostu et al., 2022). Recent research additionally suggests that inflation, currency depreciation, and declining trust in traditional monetary systems may encourage economic actors to redirect capital toward cryptocurrencies as alternative mechanisms for preserving value and facilitating financial transactions (Choi et al. 2024; Basu, 2025). Nevertheless, despite their potential advantages, cryptocurrencies continue to raise important financial, technological, and regulatory concerns related to consumer protection, institutional legitimacy, and regulatory clarity (Phillips et al., 2023).

Despite the growing relevance of cryptocurrencies and blockchain technologies, empirical research comparing cryptocurrency adoption across countries and regions remains limited. Existing studies mainly focus on technological, investment, or regulatory aspects separately, while less attention has been devoted to the combined influence of macroeconomic factors (MF), technological readiness (TR), institutional trust (IT), and regulatory frameworks (RF) on cryptocurrency adoption (CA). Accordingly, this study examines how these factors shape cryptocurrency adoption across developed and emerging economies through the following research questions:

- **RQ1:** How does cryptocurrency adoption (CA) differ between developed and emerging economies?
- **RQ2:** To what extent do macroeconomic factors (MF) and technological readiness (TR) influence cryptocurrency adoption across countries and regions?
- **RQ3:** How do regulatory frameworks (RF) and institutional trust (IT) shape the development and adoption of cryptocurrency markets?

By addressing these questions, the paper aims to identify the key determinants influencing cryptocurrency adoption within the global digital economy. The remainder of the paper is structured as follows: Section 2 presents the literature review, Section 3 outlines the research methodology and data sources, Section 4 discusses the results related to cryptocurrency adoption trends, institutional trust, and regulatory frameworks, while the final section summarizes the main findings, implications, and directions for future research.

LITERATURE REVIEW

The adoption of technological innovations varies across organizations, industries, and national economies depending on institutional structures, economic conditions, and technological capabilities (Wang et al., 2020). Similar patterns are evident in cryptocurrency and blockchain adoption, where countries differ significantly in their readiness to integrate decentralized financial technologies into existing economic systems. Previous research has primarily focused on the technological characteristics of blockchain systems, while comparatively less attention has been devoted to the determinants of cryptocurrency adoption (CA) across countries (Bhimani et al., 2021; Kouhizadeh et al., 2021; Schlecht et al., 2021). Following the introduction of Bitcoin in 2008 and Ethereum in 2015, cryptocurrency markets expanded rapidly and enabled the development of decentralized finance (DeFi) ecosystems, increasing the integration of crypto-assets into global financial systems (Aquilina et al., 2025). Recent valuation-oriented research additionally emphasizes that decentralized blockchain platforms such as Ethereum increasingly derive value not only from transaction activity, but also from monetary premium effects, network expansion potential, and technological optionality embedded within decentralized financial ecosystems (Kovšca et al., 2026).

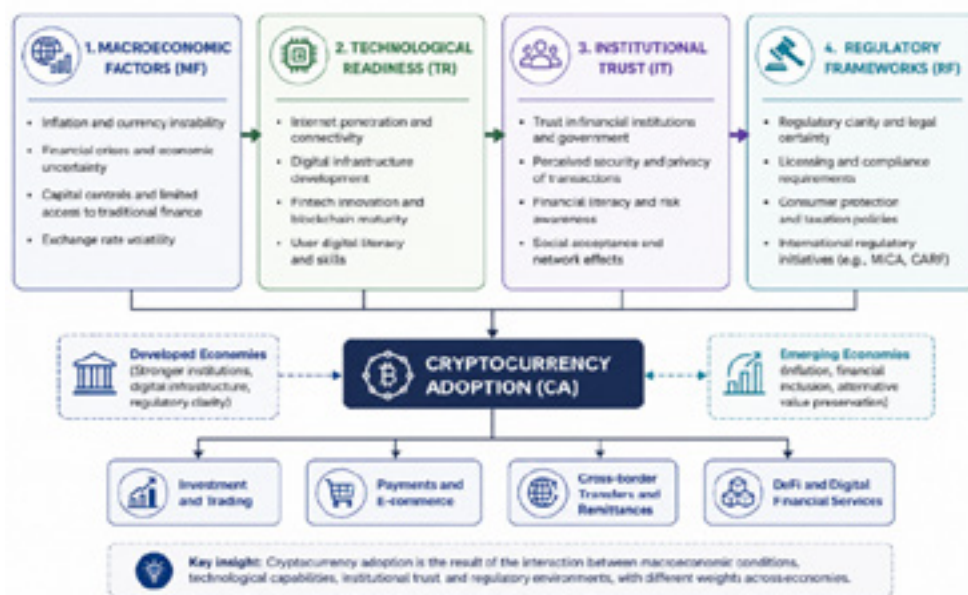
The multidimensional nature of cryptocurrency adoption can additionally be interpreted through broader innovation adoption theories, particularly the Technology-Organization-Environment (TOE) framework and Institutional Theory, which emphasize the interaction between technological capabilities, institutional environments, and regulatory conditions in shaping technological diffusion.

Existing studies suggest that cryptocurrency adoption is shaped by the interaction of macroeconomic factors (MF), technological readiness (TR), institutional trust (IT), and regulatory frameworks (RF) across developed and emerging economies (Bodkhe et al., 2020; Stockburger et al., 2021). Macroeconomic instability, inflation, and currency depreciation often encourage cryptocurrency adoption as an alternative mechanism for preserving value and conducting financial transactions (Blau et al., 2021; Conlon et al., 2021; Marthinsen & Gordon, 2022; Choi et al., 2024; Aman et al., 2025). In developed economies, cryptocurrency adoption is more commonly associated with technological innovation, institutional participation, and speculative investment motives (Enajero, 2021; Mahmood & Aslam, 2018). Technological readiness (TR) also represents an important determinant of cryptocurrency adoption, as countries with advanced digital infrastructure and higher levels of digital inclusion demonstrate greater capacity to integrate digital financial technologies into everyday activities. The broader expansion of digital platform economies and virtual monetization models, particularly within gaming and online ecosystems, additionally contributes to the normalization of digital assets, virtual transactions, and alternative payment mechanisms among con-

sumers (Kovšca et al., 2023). Regulatory frameworks (RF) and institutional trust (IT) further influence cryptocurrency market development. Supportive regulations may encourage innovation and strengthen consumer confidence, whereas restrictive or unclear regulations can discourage adoption (Mishra & Varshney, 2024). Similarly, lower trust in governmental institutions and traditional financial intermediaries may increase interest in decentralized financial systems (Umair et al., 2025). Recent global trends additionally confirm substantial regional differences in cryptocurrency adoption (CA), where developed economies demonstrate stronger institutional participation and regulatory clarity, while emerging economies exhibit faster adoption driven by inflationary pressures, stablecoin usage, and financial inclusion needs (CoinDesk Data, 2026).

Figure 1 presents the conceptual framework underlying the study, highlighting the multidimensional interaction between macroeconomic, technological, institutional, and regulatory determinants of cryptocurrency adoption across developed and emerging economies.

Figure 1. Conceptual framework: Determinants of cryptocurrency adoption across economies



Source: Authors

RESEARCH METHODOLOGY

This study applies a qualitative research approach based on a structured literature review (SLR) to examine the determinants of cryptocurrency adoption (CA) across developed and emerging economies. The methodology enables a systematic synthesis and critical evaluation of scientific knowledge related to cryptocurrencies, blockchain technologies, and the economic, technological, institutional, and regulatory factors influencing their adoption. To strengthen the comparative analysis, the study incorporates both academic literature and secondary data from institutional reports published by Chainalysis, CoinDesk Data, the Bank for International Settlements

(BIS), the Organisation for Economic Co-operation and Development (OECD), and the European Central Bank (ECB).

The literature search was conducted using the databases Web of Science and Scopus, complemented by Google Scholar and ResearchGate. The search strategy included keywords such as “cryptocurrency”, “blockchain technologies”, “digital assets”, “cryptocurrency adoption”, “financial technology”, “regulation”, and “institutional trust”, while the review focused on studies published between 2020 and 2025. The screening process included title review, abstract review, and full-text assessment. As presented in Table 1, 40 studies meeting the predefined criteria were retained for the final analysis.

Table 1: Study Selection Process for the Structured Literature Review

Review Stage	Number of Records
Records identified through database searching	1,240
Duplicate records removed	230
Records screened	1,010
Records excluded after title and abstract review	780
Full-text articles assessed for eligibility	230
Studies included in the final structured literature review	40

Source: Author's

The inclusion criteria comprised peer-reviewed journal articles, conference papers, reports, and doctoral dissertations examining cryptocurrency adoption or blockchain implementation from economic, technological, institutional, or regulatory perspectives. Non-scientific publications, duplicate records, inaccessible full texts, and highly technical studies without practical relevance were excluded. The selected literature was categorized into four thematic dimensions aligned with the conceptual research framework: macroeconomic factors (MF), technological readiness (TR), regulatory frameworks (RF), and institutional trust (IT). In addition, a basic quality assessment and risk of bias evaluation were conducted based on peer-review status, methodological transparency, empirical grounding, and relevance to the research objectives.

RESULTS AND DISCUSSION

State and Trends of Cryptocurrency Adoption Across Countries

The literature review indicates that cryptocurrency adoption (CA) differs significantly across countries and regions, directly addressing RQ1. These differences are shaped by macroeconomic conditions (MF), technological readiness (TR), regulatory frameworks (RF), and institutional development. Emerging economies are more likely to adopt cryptocurrencies in response to inflation, currency instability, and limited access to traditional financial services. Argentina represents a notable example, where inflation and currency depreciation increased the use of cryptocurrencies and stablecoins such as Tether (Garita et al., 2024), while El Salvador adopted Bitcoin as legal tender to promote financial inclusion, although everyday usage remained limited (Goldbach & Nitsch, 2024). In contrast, African countries continue to face challenges related to internet accessibility, regulatory uncertainty, and cryptocurrency volatility (Mbaye,

2021), whereas Japan and South Korea have focused on institutional supervision and regulatory integration of cryptocurrency markets.

Although prior studies generally associate cryptocurrency adoption with macroeconomic instability, evidence from several developed economies suggests that speculative investment motives and institutional participation may represent equally important drivers.

The literature additionally emphasizes that the rapid expansion of cryptocurrency markets has increased exposure to financial crime and regulatory circumvention, reinforcing the need for harmonized regulatory and accounting frameworks (Blahušiová, 2022; Juhaida Johari et al., 2020). Estonia represents a notable example where ring-fencing and swarming exposed weaknesses in regulatory oversight and institutional control (Ylönen et al., 2024). Figure 2 further supports RQ1 by demonstrating that higher cryptocurrency adoption is present not only in developed economies but also in emerging markets characterized by economic instability, rapid digital transformation, and declining trust in traditional financial systems.

Figure 2: Global Distribution of Cryptocurrency Ownership in 2022



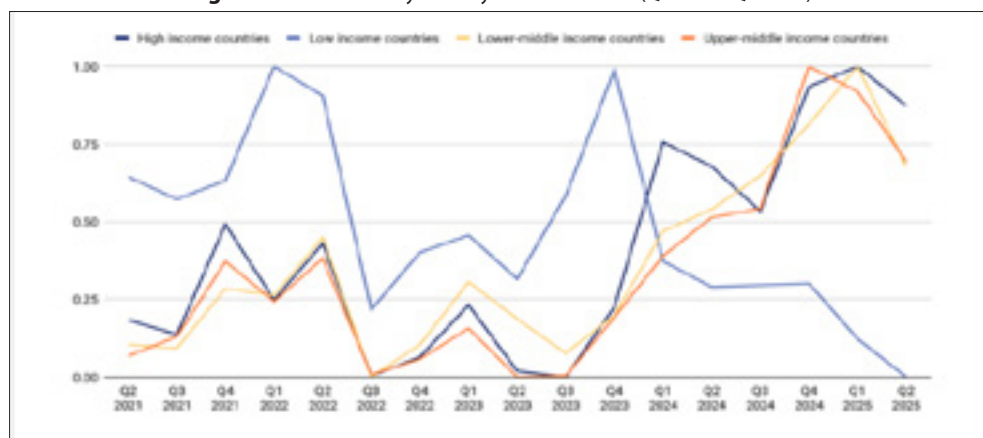
Source: Sergio & Wedemeier, 2025

Figure 3 complements this geographical perspective by presenting the evolution of cryptocurrency adoption across different country income groups between Q2 2021 and Q2 2025 using the Global Crypto Adoption Index developed by the Chainalysis research team (2025). The index is based on four sub-indices measuring the use of cryptocurrency services across 151 countries and is adjusted for population size and purchasing power. Index values range from 0 to 1, where values closer to 1 indicate higher levels of cryptocurrency adoption.

Figure 3 presents cryptocurrency adoption trends across different country income groups between Q2 2021 and Q2 2025 using the Global Crypto Adoption Index developed by Chainalysis (2025). The findings indicate that cryptocurrency adoption increased across high-income, upper-middle-income, and lower-middle-income economies after 2023. Stronger growth is particularly visible in countries such as China, Brazil, Argentina, India, Nigeria, and Pakistan, where cryptocurrency adoption is asso-

ciated with inflation, limited access to traditional financial services, expanding digital infrastructure, and increasing use of alternative payment methods. In contrast, developed economies demonstrate more stable adoption patterns supported by stronger institutional participation, developed financial markets, and clearer regulatory systems. Together, Figures 2 and 3 support RQ1 and RQ2 by indicating that cryptocurrency adoption is influenced by the interaction of economic conditions, technological readiness, and institutional development across countries and regions. These findings additionally suggest that cryptocurrency adoption cannot be explained solely through inflationary pressures, but rather through the interaction between technological maturity, regulatory legitimacy, and financial system development.

Figure 3: Index score by country income bracket (Q2 2021–Q2 2025)



Source: Chainalysis Team, 2025

Table 2 provides a structural overview of cryptocurrency market development across regions. The table supports RQ1 and RQ2 by presenting indicators related to market activity, institutional participation, regulatory readiness, and user adoption. CeFi trading share reflects cryptocurrency market activity, stablecoin flow share indicates the use of digital assets in transactions and cross-border payments, while exchange-traded product assets under management (ETP AUM) measure institutional participation and investor confidence. Stablecoin laws and licensing frameworks represent regulatory readiness, whereas cryptocurrency ownership rates indicate the level of user and business adoption across developed and emerging economies.

Table 2: Comparative Overview of Cryptocurrency Adoption Across Regions

Region	CeFi Trading	Stablecoin Flows	ETP AUM	ETP Presence	Stablecoin Regulation	Licensing Frameworks	Crypto Ownership
North America	\$1.6T	\$5.18T	\$158B	Yes	Yes	64	11.0%
Asia	\$3.0T	\$12.5T	\$1.5B	Yes	Yes	76	8.82%
EU	\$2.1T	\$5.62T	\$6B	Yes	Yes	78	3.80%
LATAM	\$2.0T	\$5.64T	\$0	No	No	34	8.00%

Region	CeFi Trading	Stablecoin Flows	ETP AUM	ETP Presence	Stablecoin Regulation	Licensing Frameworks	Crypto Ownership
Africa & Middle East	\$1.4T	\$4.8T	\$0	No	Yes	27	7.70%
UK	\$143.5B	\$2.46T	\$11.6M	Yes	No	19	5.74%

Source: Authors according to CoinDesk Data - The 2026 Global Digital Asset Adoption Index

The findings reveal substantial regional differences in cryptocurrency market maturity. Asia records the highest market activity, particularly in stablecoin flows and CeFi trading volume, while North America demonstrates the greatest institutional depth due to high ETP assets under management. The European Union shows comparatively high regulatory readiness through licensing frameworks and legal support for stablecoins. In contrast, Latin America exhibits relatively high cryptocurrency ownership despite lower institutional participation, suggesting that adoption is strongly influenced by inflationary pressures and practical financial needs. Africa and the Middle East also demonstrate increasing adoption supported by stablecoin usage and expanding digital financial activity, although institutional participation and regulatory structures remain less developed. Overall, the results indicate that cryptocurrency adoption is shaped by the interaction of macroeconomic conditions, technological readiness, institutional participation, and regulatory frameworks across regions.

Institutional Trust and Regulatory Frameworks

The findings additionally indicate that institutional trust (IT) and regulatory frameworks (RF) represent important determinants of cryptocurrency adoption, thereby directly contributing to RQ3. Previous research emphasizes that trust, privacy, and financial literacy significantly influence cryptocurrency acceptance within business environments. Palos-Sanchez et al. (2021) identified trust as a key determinant affecting perceptions of privacy, while García-Monleón et al. (2023) argue that cryptocurrency adoption is shaped by both financial value and users' knowledge and familiarity with cryptocurrencies. Similarly, Zamora-Pérez (2026) highlights that cryptocurrency owners and payment users demonstrate different behavioural profiles, whereas Ursu et al. (2025) emphasize the importance of financial and technological knowledge for entrepreneurial openness toward cryptocurrency adoption. Collectively, these findings underline the importance of institutional trust, financial literacy, perceived security, and regulatory clarity in strengthening broader cryptocurrency adoption.

Alongside institutional trust, regulatory frameworks constitute another critical determinant of cryptocurrency market development. The rapid growth of blockchain technologies and cryptocurrencies has exposed limitations within existing legal and regulatory systems, particularly regarding consumer protection, accounting treatment, and legal oversight (Benson et al., 2024; Wronka, 2024; Niftaliyev, 2023). Hubbard (2023) notes that specific United States Generally Accepted Accounting Principles (US GAAP) guidelines for crypto-assets still do not exist, resulting in cryptocurrencies often being classified as intangible assets or goodwill.

In response to the growing importance of digital assets, the European Union introduced the Markets in Crypto-Assets Regulation (MiCA) aimed at strengthen-

ing investor protection and reducing regulatory gaps within the European financial system (Zetzsche et al., 2025). MiCA establishes a harmonized framework for crypto-asset markets and regulates crypto-asset issuers and Crypto-Asset Service Providers (CASPs), including asset-referenced tokens, e-money tokens, and utility tokens (Xiong & Lou, 2024). Alongside MiCA, the revised Transfers of Funds Regulation introduced additional requirements concerning the traceability of cryptocurrency transactions (Xiong & Lou, 2024). Nevertheless, MiCA has been criticized for relying heavily on legal mechanisms originally developed for traditional securities markets, which may limit its effectiveness in addressing the specific characteristics of crypto-assets (Barcentewicz & De Gândara Gomes, 2024). Comparative research additionally demonstrates substantial differences in national regulatory approaches toward crypto-assets. Wronka (2024) emphasizes that the United Kingdom has adopted a more principles-based regulatory framework focused on innovation and industry growth, whereas Germany applies a more cautious and prescriptive approach prioritizing investor protection and market stability. Furthermore, unresolved issues related to taxation and accounting treatment continue to represent important challenges for broader institutional integration and market stability (Halász, 2024).

According to the OECD (2023), the rapid expansion of crypto-asset markets and cross-border digital transactions has additionally increased challenges related to tax transparency and international financial supervision. In response, the OECD introduced the Crypto-Asset Reporting Framework (CARF) aimed at establishing standardized international rules for the automatic exchange of information related to crypto-asset transactions between tax authorities.

Beyond regulatory concerns, cryptocurrencies also involve operational and security-related risks, including hacking attacks, financial losses, and illicit activities (Luchkin AG et al., 2020). However, cryptocurrencies and blockchain technologies simultaneously provide important advantages such as lower transaction costs, increased efficiency, broader customer access, enhanced transaction security, and support for innovative business models and startup financing (Kharis & Giurgiu, 2023; Fauzi et al., 2020; Rejeb et al., 2021). Overall, the findings suggest that cryptocurrency adoption is influenced by the combined effects of macroeconomic instability, technological readiness, institutional trust, and regulatory development across developed and emerging economies.

CONCLUSION

The findings of this study confirm that cryptocurrency adoption is shaped by the interaction of macroeconomic factors (MF), technological readiness (TR), institutional trust (IT), and regulatory frameworks (RF), with significant differences observable between developed and emerging economies. Cryptocurrency adoption is particularly significant in economies affected by inflation, currency instability, and limited access to traditional financial services, where cryptocurrencies and stablecoins increasingly function as alternative financial mechanisms and payment solutions. In developed economies, cryptocurrency adoption is more frequently associated with technological innovation, institutional participation, and speculative investment motives.

The findings additionally indicate that technological readiness, financial literacy, institutional trust, and regulatory clarity represent important prerequisites for

broader cryptocurrency adoption and long-term market development. At the same time, the rapid expansion of digital assets continues to raise challenges related to financial stability, tax transparency, consumer protection, and regulatory harmonization across countries and regions.

The main contribution of this paper lies in the integration of economic, technological, institutional, and regulatory perspectives into a comprehensive analytical framework explaining cryptocurrency adoption across countries and regions. The findings provide important implications for policymakers, financial institutions, and businesses by emphasizing the need for balanced regulatory frameworks, improved financial literacy, stronger investor protection, and greater institutional transparency in digital financial markets.

The findings additionally suggest that policymakers in emerging economies should focus on balancing innovation support with financial stability objectives, while developed economies may prioritize institutional integration and regulatory harmonization of digital assets. Consequently, cryptocurrency adoption should be understood as a multidimensional socio-economic and technological phenomenon rather than solely as a response to financial instability.

Several limitations of the study should nevertheless be acknowledged. The research is primarily based on secondary literature and institutional reports without the use of original empirical data. In addition, the rapid evolution of cryptocurrency markets and regulatory environments may affect the long-term stability of certain findings. Future research could therefore focus on empirical analyses conducted on specific industries, business sectors, and national markets in order to examine cryptocurrency adoption patterns, organizational behaviour, and regulatory adaptation in greater detail.

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