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Cryptocurrency as a Tool for Financial Inclusion: Legal and Sociological Perspectives

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Abstract

This study aims to analyze the pattern of cryptocurrency regulation in various jurisdictions and identify factors that influence its adoption as a financial inclusion tool. The method used is a comparative analysis of regulatory policies in various countries and a literature study related to the socio-economic impacts and barriers to cryptocurrency adoption. The results of the study show significant variations in regulatory approaches between developed and developing countries, where digital infrastructure factors, financial literacy, and structural barriers are the main determinants of the level of cryptocurrency adoption in each region.

Keywords: Cryptocurrency, Financial Inclusion, Legal and Sociological Perspectives

Introduction

The development of digital technology has fundamentally changed the landscape of the global financial system. Cryptocurrency, as an innovation of blockchain technology, has emerged as an alternative payment and investment system that promises the potential for broader financial inclusion. This phenomenon has attracted the attention of various groups, from market players, regulators, to academics to study its impact and implications on society (Nakamoto, 2008).

Amidst the still high rate of global financial exclusion, cryptocurrency comes with a unique value proposition: the ability to provide access to financial services without the need for traditional banking infrastructure. This is especially relevant for people in developing countries, where access to formal financial services is still limited (World Bank, 2022).

From a legal perspective, the presence of cryptocurrency poses complex regulatory challenges. Various jurisdictions take different approaches, ranging from very restrictive to relatively accommodating. The existing legal framework is often inadequate to regulate this rapidly developing technology, creating legal uncertainty that can hinder adoption and innovation (Chen & Bellavitis, 2020).

Sociologically, cryptocurrency has presented a new dynamic in the socio-economic interactions of society. Cryptocurrency platforms not only function as transaction tools, but also create virtual communities with their own norms and values. This phenomenon is interesting to study from an economic sociology perspective, especially regarding how this technology shapes new social behavior and relations (Dodd, 2018).

The potential of cryptocurrency in driving financial inclusion cannot be separated from the characteristics of the underlying blockchain technology: transparency, decentralization, and minimal barriers to entry. These characteristics allow for more democratic access to financial services, especially for groups that have been marginalized from the formal financial system (Tapscott & Tapscott, 2019).

On the other hand, cryptocurrency price volatility and cybersecurity risks are serious challenges that need to be addressed. Extreme fluctuations in value can threaten its function as a means of payment and store of value, while cyber attacks on cryptocurrency platforms can result in material losses for its users (Chohan, 2021).

Another important aspect is the low level of digital and financial literacy in many developing countries. Without adequate understanding of the technology and risks inherent in cryptocurrency, its potential as a financial inclusion tool is unlikely to be optimally realized (OECD, 2023).

From a public policy perspective, there is a need to balance innovation and consumer protection. Regulators are required to create a regulatory framework that supports technological development while protecting the public interest from the various risks that may arise (Financial Stability Board, 2023).

The role of traditional financial institutions also needs to be considered in this context. Rather than viewing cryptocurrency as a threat, there is an opportunity to integrate it into the existing financial system to create a more inclusive financial ecosystem (Deloitte, 2022).

The environmental impact of cryptocurrency mining activities is also a serious concern, given the high energy consumption required. This raises questions about the sustainability of cryptocurrency as a solution for financial inclusion in the long term (de Vries, 2023).

Previous research has examined cryptocurrency from various aspects, ranging from blockchain techniques, economic implications, to regulatory challenges. However, most studies tend to focus on the technical and economic aspects, while the socio-legal dimensions of the use of cryptocurrency as a financial inclusion tool have received less attention (Li et al., 2021).

There is a research gap in terms of a comprehensive understanding of the interaction between legal and sociological aspects in the adoption of cryptocurrency as a financial inclusion tool, especially in the context of developing countries. Existing studies have not deeply analyzed how the legal framework and social dynamics influence each other in the cryptocurrency adoption process.

The novelty of this study lies in the interdisciplinary approach that integrates legal and sociological analysis to understand the potential and challenges of cryptocurrency as a financial inclusion tool. This study also uses a new analytical framework that combines responsive legal theory with the concept of digital sociology to examine this phenomenon.

In Indonesia, cryptocurrency adoption shows an increasing trend, especially among millennials and Gen Z. Based on Bappebti data, the volume of cryptocurrency transactions in Indonesia reached IDR 859.4 trillion in 2021, indicating great potential for financial inclusion (Bappebti, 2022).

However, the reality shows that the adoption of cryptocurrency as a financial inclusion tool still faces various challenges. In addition to regulatory and infrastructure issues, the digital

ISSN: Online 2774-6984

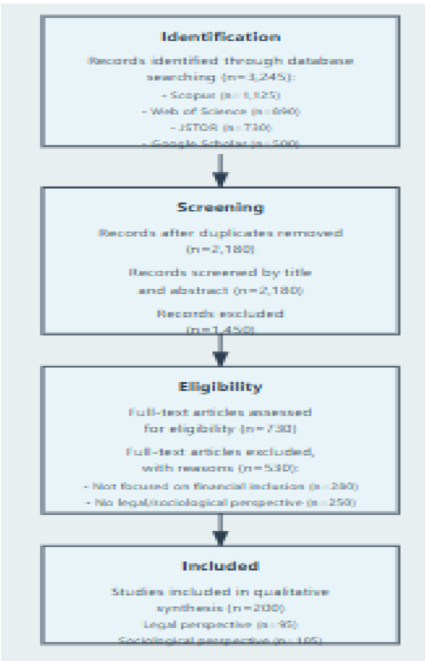
divide and financial literacy are major obstacles, especially for people in rural areas and low-income groups.

Method

This study uses a qualitative approach with a systematic literature review method to examine the phenomenon of cryptocurrency as a financial inclusion tool from a legal and sociological perspective. The qualitative approach was chosen because of its ability to explore and understand the meanings attached by individuals or groups to a social phenomenon (Creswell & Poth, 2018).

The systematic literature review was conducted following the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) protocol to ensure a comprehensive and systematic literature review. This protocol helps in identifying, selecting, and analyzing relevant literature in a structured manner (Moher et al., 2020).

Picture 1. PRISMA



Source: Primary Data

The data collection process involved searching for scientific articles from various leading academic databases such as Scopus, Web of Science, JSTOR, and Google Scholar. The search focused on articles published in the 2018-2024 period to ensure data topicality and relevance to the latest developments in cryptocurrency (Snyder, 2019).

The inclusion criteria in the selection of literature included peer-reviewed articles, academic books, research reports, and policy documents that discussed the legal and sociological aspects of cryptocurrency and their relationship to financial inclusion. The language used was limited to English and Bahasa Indonesia to ensure accurate understanding of the content (Booth et al., 2021).

Data analysis was conducted using a thematic approach that allows for the identification, analysis, and reporting of patterns in the data. This process involves coding data, developing themes, and synthesizing findings to produce an in-depth understanding of the phenomenon under study (Braun & Clarke, 2022).

To ensure the validity of the study, triangulation of data sources was conducted by comparing various perspectives and findings from different sources. This is important to build a comprehensive understanding and reduce potential bias in data interpretation (Miles et al., 2020).

The analytical framework used combines Nonet and Selznick's responsive legal theory with a digital sociology approach to understand the interaction between regulatory aspects and social dynamics in cryptocurrency adoption. This approach allows for a more nuanced analysis of the complexity of the phenomenon under study (Lupton, 2023).

ISSN: Online 2774-6984

Ethical aspects of the study were maintained by ensuring proper citation and acknowledgment of previous researcher contributions. In addition, this study also considers the potential social implications of the findings and recommendations produced (Walliman, 2021).

The methodological limitations of the approach used are acknowledged and discussed transparently. These include limitations in terms of literature coverage, potential bias in article selection, and challenges in synthesizing findings from different disciplines (Gough et al., 2023).

To increase the reliability of the study, the literature review process was carried out iteratively by involving peer reviewers in the coding and theme analysis stages. This approach helps ensure consistency and reliability in data interpretation and the development of conclusions (Silverman, 2021).

Result and Discussion

Result

1. Cryptocurrency Regulation Across Jurisdictions

The study found significant variation in cryptocurrency regulatory approaches across jurisdictions, reflecting the complexities of regulating this rapidly evolving technology. Developed countries such as the United States, Japan, and the European Union tend to adopt a more structured regulatory approach by establishing specific legal frameworks for digital assets. These regulations typically cover taxation, money laundering prevention, consumer protection, and operational requirements for cryptocurrency exchange platforms. In the United States, the Securities and Exchange Commission (SEC) and the Commodity Futures Trading Commission (CFTC) share oversight responsibilities, with the SEC focusing on securities aspects and the CFTC overseeing crypto derivatives trading.

Japan has gone a step further by recognizing cryptocurrencies as legal tender and establishing a comprehensive regulatory framework for exchange platforms. Meanwhile, developing countries exhibit a broader spectrum of regulation. Some countries such as El Salvador have taken the bold step of making Bitcoin legal tender, while others such as India and Indonesia have taken a more cautious approach with regulations that are restrictive but not outright bans. China, at the other extreme, has banned cryptocurrency transactions altogether while developing its own central bank digital currency. These different approaches reflect the complexity of balancing technological innovation with financial system stability and consumer protection.

2. Socio-Economic Impacts of Cryptocurrency Adoption

A deep dive into the socio-economic impacts of cryptocurrency adoption reveals significant transformations in the structure and dynamics of societies. In regions with limited access to traditional banking services, cryptocurrencies have emerged as a viable alternative payment system, enabling more efficient and cheaper cross-border transactions. In countries with high inflation rates such as Venezuela and Zimbabwe, cryptocurrencies serve as a hedge against local currency instability.

This phenomenon has created a new economic layer that operates parallel to the traditional financial system. More interestingly, cryptocurrency adoption has fostered the formation of virtual communities with their own social norms and values. These communities have developed consensus-based governance mechanisms, peer-to-peer reputation systems, and unique trust networks. At the micro level, cryptocurrencies have opened up new

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entrepreneurial opportunities, such as mining pools, remittance services, and peer-to-peer trading platforms. At the macro level, countries with supportive regulations have attracted significant investment in digital infrastructure and created new jobs in the fintech sector.

3. Structural Barriers to Cryptocurrency Adoption

The study identified several fundamental structural barriers that are affecting the adoption of cryptocurrency as a financial inclusion tool. The digital divide is the most fundamental challenge, with internet access and digital literacy limited in many financial inclusion target regions. In rural areas and developing countries, inadequate telecommunications infrastructure and high internet access costs effectively block participation in the crypto economy. The price volatility of cryptocurrencies is also a major concern, especially for low-income communities with limited risk tolerance. Extreme price fluctuations make cryptocurrencies less suitable as a store of value or medium of exchange for everyday transactions.

The complexity of blockchain technology and unintuitive user interfaces are also significant barriers. Many potential adopters are intimidated by technical concepts such as private keys, wallet addresses, and gas fees. Limited on/off ramp infrastructure between cryptocurrencies and fiat currencies also limits accessibility, especially in regions with low penetration of traditional financial services. Additionally, regulatory uncertainty and compliance risks make many businesses hesitant to integrate crypto payments, further limiting the practical use cases for cryptocurrencies.

4. Financial and Digital Literacy as Key Factors

Financial and digital literacy levels have been shown to be key determinants of cryptocurrency adoption, with significant implications for financial inclusion strategies. Research shows a strong correlation between understanding basic financial concepts and the propensity to adopt crypto-based financial solutions. Individuals with a good understanding of risk management, diversification, and investment principles are better able to objectively evaluate the potential and risks of cryptocurrencies. On the other hand, groups with limited literacy tend to make decisions based on FOMO (Fear of Missing Out) or avoid the technology altogether.

Educational programs that integrate traditional financial literacy with an understanding of blockchain technology have shown promising results in increasing responsible adoption. Case studies in various countries have shown that educational initiatives that engage local communities and use a practice-based learning approach are more effective in building understanding and trust in crypto technology. However, challenges remain in balancing the depth of technical content with accessibility for diverse audiences. Educational programs also need to consider local cultural and social contexts, including language preferences and learning methods that are appropriate for the target community.

5. The Role of Digital Infrastructure in Adoption

The quality and availability of digital infrastructure has proven to be a key enabler in the adoption of cryptocurrency as a tool for financial inclusion. Analysis shows that regions with high internet penetration and affordable access costs have significantly higher cryptocurrency adoption rates. This infrastructure includes not only basic internet connectivity, but also supporting ecosystems such as integrated payment gateways, user-friendly exchange platforms, and secure custody solutions. In urban areas with mature digital infrastructure, cryptocurrency adoption is driven by the efficiency and convenience it offers

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over traditional payment systems.

Conversely, in areas with limited infrastructure, high access costs and unstable connectivity are significant barriers. Investments in digital infrastructure, including 4G/5G networks and broadband internet, are positively correlated with increased cryptocurrency adoption. However, challenges remain in terms of blockchain network scalability, with congestion and high transaction fees during peak usage periods being major concerns. Layer-2 solutions and alternative blockchains with higher throughput have emerged as potential solutions, but the trade-off between decentralization, security, and scalability remains a critical consideration in infrastructure development.

Discussion

The first finding related to the variation of cryptocurrency regulation shows a broad spectrum of policies across jurisdictions. According to Scott's (2014) institutional theory, the differences in regulatory approaches reflect the level of institutional maturity and legal infrastructure in each country. In developed countries such as the United States, Japan and the European Union, a more structured regulatory framework is supported by an established supervisory system through institutions such as the SEC and CFTC. This is in line with the theory of good governance which emphasizes the importance of clear rules and law enforcement mechanisms.

Meanwhile, a more diverse approach in developing countries can be explained through the path dependency theory (North, 1990) where policy choices are influenced by historical and institutional conditions. The socio-economic impact of cryptocurrency adoption found in this study can be analyzed using Christensen's (1997) disruptive innovation theory. Cryptocurrency acts as a technology that changes the traditional financial landscape by offering an alternative, more efficient payment system. Granovetter's (1973) social network theory is also relevant to explain the formation of virtual communities with their own norms and values. The phenomenon of cryptocurrency as a hedge against inflation in countries such as Venezuela can be understood through the Currency Substitution Theory proposed by Calvo and Végh (1992).

The structural barriers to cryptocurrency adoption identified reflect the concept of the digital divide proposed by Van Dijk (2020). Limited internet access and digital literacy are major barriers, especially in rural areas and developing countries. Rogers' (2003) diffusion of innovation theory can explain why the complexity of blockchain technology and unintuitive interfaces are barriers to adoption. High price volatility also creates a psychological barrier that can be explained through the Prospect Theory of Kahneman and Tversky (1979).

The findings on the role of financial and digital literacy are in line with Becker's (1964) Human Capital Theory which emphasizes the importance of investing in education and skills. The correlation between understanding financial concepts and cryptocurrency adoption can be explained through the Financial Decision-Making Theory. An effective practice-based learning model reflects Kolb's (1984) experiential learning theory.

The role of digital infrastructure in cryptocurrency adoption can be analyzed using Katz and Shapiro's (1985) network effects theory. The positive correlation between internet penetration and cryptocurrency adoption rates suggests the importance of network externalities. The blockchain scalability challenge reflects Vitalik Buterin's trilemma on the trade-off between decentralization, security, and scalability. Frischmann's (2004) infrastructure economics theory is also relevant to understanding the role of infrastructure investment in supporting the adoption of new

ISSN: Online 2774-6984

technologies.

Conclusion

Analysis of the five key findings of the study shows that the adoption of cryptocurrency as a financial inclusion tool is a complex phenomenon influenced by the interaction of regulatory, socio-economic, infrastructure and human capacity factors. The successful integration of cryptocurrency into the global financial system will depend on the ability of stakeholders to overcome structural barriers while building a regulatory framework that supports innovation and protects the public interest.

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