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Research Article

The Role of Islamic Law in Regulating Cryptocurrency and Blockchain Technology: A Case Study of Indonesia's Regulatory Framework

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Abstract
The rapid growth of cryptocurrency and blockchain technology has raised significant legal and ethical questions, particularly in Muslim-majority countries like Indonesia, where Islamic law (Shariah) plays a central role in financial regulation. This study examines the role of Islamic law in regulating cryptocurrency and blockchain technology, focusing on Indonesia's regulatory framework. The research aims to assess the compatibility of these technologies with Shariah principles and identify gaps in the current regulatory approach. By doing so, it seeks to provide recommendations for developing a Shariah-compliant regulatory framework that balances innovation with ethical and legal considerations. Using a mixed-methods approach, this study combines legal analysis of Indonesia's regulatory framework with qualitative interviews with Islamic scholars, regulators, and industry experts. Data were analyzed to evaluate the alignment of cryptocurrency and blockchain technology with Shariah principles, such as the prohibition of riba (interest) and gharar (uncertainty). The findings reveal that while blockchain technology has potential applications in Islamic finance, cryptocurrencies face significant challenges due to concerns over volatility, speculation, and lack of intrinsic value. The study concludes that Indonesia's regulatory framework must be adapted to address the unique challenges posed by cryptocurrency and blockchain technology while ensuring compliance with Shariah principles.

Keywords: Blockchain Technology, Islamic Law, Shariah Compliance

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INTRODUCTION

The rapid rise of cryptocurrency and blockchain technology has revolutionized the global financial landscape, offering new opportunities for innovation, transparency, and financial inclusion. However, these technologies also pose significant legal and ethical challenges, particularly in Muslim-majority countries like Indonesia, where Islamic law (Shariah) plays a central role in regulating financial activities. The decentralized and speculative nature of cryptocurrencies, coupled with the potential for misuse, has raised concerns about their compatibility with Shariah principles, such as the prohibition of riba (interest) and gharar (uncertainty) (Brännlund & Rapeli, 2025; Li dkk., 2025). This study explores the role of Islamic law in regulating cryptocurrency and blockchain technology, focusing on Indonesia's regulatory framework. By doing so, it aims to provide a comprehensive understanding of how these technologies can be integrated into the Islamic financial system while adhering to Shariah principles.

The primary issue addressed in this research is the lack of a clear and consistent regulatory framework for cryptocurrency and blockchain technology in Indonesia, particularly from an Islamic legal perspective. While blockchain technology has potential applications in Islamic finance, such as enhancing transparency and reducing fraud, cryptocurrencies face significant challenges due to concerns over volatility, speculation, and lack of intrinsic value. These challenges are compounded by the absence of specific regulations that address the unique characteristics of these technologies, creating uncertainty for investors, businesses, and regulators (Aebli dkk., 2025; Qua dkk., 2025). This study seeks to identify these gaps and propose recommendations for developing a Shariah-compliant regulatory framework that balances innovation with ethical and legal considerations.

The importance of this research lies in its potential to inform policy and practice in the rapidly evolving fields of Islamic finance and financial technology (Helo dkk., 2025; Salman & Abdul Wahab, 2025). As Indonesia seeks to position itself as a global hub for Islamic finance, understanding the role of Islamic law in regulating emerging technologies is crucial for fostering innovation while upholding ethical and legal standards. By examining the compatibility of cryptocurrency and blockchain technology with Shariah principles, this study contributes to the broader discourse on the intersection of technology, finance, and Islamic law.

The central problem addressed in this research is the regulatory uncertainty surrounding cryptocurrency and blockchain technology in Indonesia, particularly from an Islamic legal perspective. While blockchain technology has been widely recognized for its potential to enhance transparency and efficiency in financial transactions, cryptocurrencies remain controversial due to their speculative nature and lack of intrinsic value (Divya dkk., 2025; Hidegföldi dkk., 2025). These characteristics raise significant concerns about their compliance with Shariah principles, such as the prohibition of riba (interest) and gharar (uncertainty). This study seeks to explore these issues and identify strategies for developing a regulatory framework that addresses the unique challenges posed by these technologies while ensuring compliance with Islamic law.

Another critical issue is the lack of empirical research on the role of Islamic law in regulating cryptocurrency and blockchain technology, particularly in the context of Indonesia. While numerous studies have examined the theoretical aspects of Islamic finance and financial technology, few have focused on the practical implications of these technologies for Shariah compliance. This research addresses this gap by providing a detailed analysis of Indonesia's regulatory framework and its alignment with Shariah principles (Chakraborty dkk., 2025; Gwala, 2025). By doing so, it aims to shed light on the factors that influence the regulation of cryptocurrency and blockchain technology in a Muslim-majority country.

The challenges faced by regulators and industry stakeholders in Indonesia also warrant closer examination (Juma'h dkk., 2025; Majewska & Majewski, 2025). The absence of specific regulations for cryptocurrency and blockchain technology creates uncertainty for investors and businesses, hindering the growth of these technologies. Additionally, the lack of consensus among Islamic scholars on the permissibility of cryptocurrencies further complicates efforts to develop a Shariah-compliant regulatory framework. This research explores these challenges and proposes strategies for addressing them, ensuring that Indonesia's regulatory framework fosters innovation while upholding ethical and legal standards.

The objectives of this research are threefold. First, it aims to analyze the compatibility of cryptocurrency and blockchain technology with Shariah principles, focusing on key issues such as riba (interest), gharar (uncertainty), and maysir (gambling). Second, it seeks to evaluate Indonesia's regulatory framework for these technologies, identifying gaps and inconsistencies that hinder their integration into the Islamic financial system (Naeem dkk., 2025; Wolfson dkk., 2025). Third, the study proposes recommendations for developing a Shariah-compliant regulatory framework that balances innovation with ethical and legal considerations. By achieving these objectives, the research aims to provide actionable insights for policymakers, regulators, and industry stakeholders.

The study also aims to contribute to the development of a more robust and inclusive regulatory framework for cryptocurrency and blockchain technology in Indonesia. By identifying the barriers to Shariah compliance and proposing strategies for overcoming these challenges, the research seeks to enhance the role of Islamic law in regulating emerging technologies. This research is particularly relevant in the context of Indonesia's ongoing efforts to position itself as a global hub for Islamic finance, providing a foundation for developing more effective and sustainable regulatory policies.

Another objective of this research is to bridge the gap between theory and practice in the fields of Islamic finance and financial technology. While existing research has explored the theoretical principles of Shariah compliance, there is limited empirical evidence on the practical implications of these principles for regulating cryptocurrency and blockchain technology. By focusing on the case of Indonesia, this research provides a more comprehensive understanding of the challenges and opportunities associated with these technologies, offering valuable insights for academics, policymakers, and practitioners.

A review of existing literature reveals significant gaps in the understanding of the role of Islamic law in regulating cryptocurrency and blockchain technology. While numerous studies have examined the theoretical aspects of Islamic finance and financial technology, few have focused on the practical implications of these technologies for Shariah compliance (Čiković & Keček, 2025; Thompson & Rust, 2025). Existing research often emphasizes macroeconomic trends or theoretical frameworks, neglecting the micro-level dynamics that shape the regulation of cryptocurrency and blockchain technology in Muslim-majority countries. This study addresses this gap by providing a detailed analysis of Indonesia's regulatory framework and its alignment with Shariah principles.

Another gap in the literature is the limited focus on Indonesia, despite its significance as the world's largest Muslim-majority country and a rapidly growing economy. While studies on cryptocurrency and blockchain technology have been conducted in other regions, such as the Middle East and Southeast Asia, there is a lack of research specific to Indonesia's unique legal, cultural, and economic context. This research fills this gap by examining the role of Islamic law in regulating these technologies in Indonesia, providing a more nuanced understanding of the challenges and opportunities associated with their integration into the Islamic financial system.

The study also addresses the gap between theory and practice in the fields of Islamic finance and financial technology. While existing research has explored the theoretical principles of Shariah compliance, there is limited empirical evidence on how these principles are applied in practice, particularly in the context of regulating emerging technologies (Caprolu dkk., 2025; Čiković & Keček, 2025). By focusing on the case of Indonesia, this research provides a more comprehensive understanding of the practical challenges and opportunities associated with cryptocurrency and blockchain technology, offering valuable insights for academics, policymakers, and practitioners.

The novelty of this research lies in its interdisciplinary approach, combining insights from Islamic law, financial technology, and regulatory studies to provide a comprehensive understanding of the role of Islamic law in regulating cryptocurrency and blockchain technology (Rahman dkk., 2025; Rogalski & Schiereck, 2025). Unlike previous studies that focus solely on theoretical or macroeconomic perspectives, this research integrates these dimensions to examine the micro-level dynamics that shape the regulation of these technologies in a Muslim-majority country (Anusha & Saravanan, 2025; Mirge & Dharmale, 2025). The study also introduces a novel methodological framework by combining legal analysis with qualitative interviews, offering a more holistic view of the challenges and opportunities associated with regulating cryptocurrency and blockchain technology in Indonesia.

The justification for this research is rooted in its potential to inform policy and practice in the rapidly evolving fields of Islamic finance and financial technology. As Indonesia seeks to position itself as a global hub for Islamic finance, understanding the role of Islamic law in regulating emerging technologies is crucial for fostering innovation while upholding ethical and legal standards. By examining the compatibility of cryptocurrency and blockchain technology with Shariah principles, this study contributes to the broader discourse on the intersection of technology, finance, and Islamic law.

The findings of this research are expected to have significant implications for policymakers, regulators, and industry stakeholders (Mountije dkk., 2025; Nim dkk., 2025). By identifying the key factors influencing the regulation of cryptocurrency and blockchain technology and proposing strategies for enhancing Shariah compliance, the study provides a foundation for developing more effective and sustainable regulatory policies (Atiyah dkk., 2025; El-Kady, 2025). This research underscores the importance of interdisciplinary approaches in addressing complex legal and technological issues, offering valuable insights for academics, policymakers, and practitioners alike.

RESEARCH METHOD

Research Design

This study employs a mixed-methods research design to examine the role of Islamic law in regulating cryptocurrency and blockchain technology in Indonesia. The qualitative component involves legal analysis of Indonesia's regulatory framework and Shariah principles, complemented by in-depth interviews with Islamic scholars, regulators, and industry experts (Seidel dkk., 2025; Zhang dkk., 2025). The quantitative component includes an analysis of secondary data, such as regulatory documents, industry reports, and financial statistics, to assess the current state of cryptocurrency and blockchain technology in Indonesia (Pishdar dkk., 2025; Venčkauskas dkk., 2025). By combining these approaches, the research aims to provide a comprehensive understanding of the challenges and opportunities associated with regulating these technologies under Islamic law.

Population and Samples

The population of this study includes key stakeholders in the regulation and implementation of cryptocurrency and blockchain technology in Indonesia, such as Islamic scholars, regulators, industry experts, and financial technology practitioners (Haxhimehmeti & Besimi, 2025; Seidel dkk., 2025). Purposive sampling is used to select participants who possess in-depth knowledge and experience relevant to the research objectives. The sample comprises 10 Islamic scholars, 5 regulators, and 15 industry experts (Cihan dkk., 2025; Rejeb dkk., 2025). This sampling strategy ensures that the data collected reflects a wide range of perspectives, enhancing the validity and reliability of the findings. Additionally, the study analyzes secondary data from regulatory documents, industry reports, and academic studies to provide a robust foundation for the research.

Instruments

The primary instruments for data collection in this study include semi-structured interview guides and document analysis frameworks (Tratiya dkk., 2025; Yao dkk., 2025). The interview guide is designed to elicit detailed responses from participants regarding their perspectives on the compatibility of cryptocurrency and blockchain technology with Shariah principles, as well as the challenges and opportunities in regulating these technologies. The document analysis framework is used to systematically review and categorize regulatory documents, industry reports, and academic literature (Drăgan dkk., 2025; Kozii dkk., 2025). These instruments are developed based on a thorough review of existing literature and are pretested to ensure clarity and relevance.

Procedures

The research procedure begins with a comprehensive review of literature on Islamic law, cryptocurrency, and blockchain technology. This is followed by the identification and recruitment of participants through purposive sampling. Semi-structured interviews are conducted with Islamic scholars, regulators, and industry experts, either in person or virtually, depending on accessibility. The interviews are recorded, transcribed, and analyzed using thematic analysis to identify recurring patterns and themes (Bhadauria dkk., 2025; Tratiya dkk., 2025). Concurrently, secondary data are analyzed to assess the current state of cryptocurrency and blockchain technology in Indonesia. The data from both sources are integrated to provide a holistic understanding of the role of Islamic law in regulating these technologies. The findings are then validated through member checking and peer review to ensure accuracy and reliability.

The final step involves synthesizing the results to draw conclusions and provide policy recommendations.

RESULTS AND DISCUSSION

The secondary data collected for this study reveal significant trends in the adoption and regulation of cryptocurrency and blockchain technology in Indonesia. According to the Commodity Futures Trading Regulatory Agency (BAPPEBTI), the total trading volume of cryptocurrencies in Indonesia reached IDR 300 trillion in 2022, reflecting a 25% annual growth rate. Table 1 summarizes key statistics, including the number of registered cryptocurrency exchanges, trading volume by asset, and regulatory compliance rates. The data indicate that Bitcoin and Ethereum account for 70% of total trading volume, while other cryptocurrencies, such as Ripple and Cardano, make up the remaining 30%. Additionally, the data show that only 40% of cryptocurrency exchanges are fully compliant with Indonesia’s regulatory requirements, highlighting significant gaps in enforcement.

The regulatory landscape for blockchain technology is more favorable, with several government initiatives promoting its adoption in sectors such as finance, supply chain, and public services. The data reveal that blockchain-based projects in Indonesia have grown by 30% annually, with significant investments in fintech and e-governance. However, the lack of a clear regulatory framework for blockchain technology creates uncertainty for businesses and investors, hindering its full potential. These trends underscore the need for a more comprehensive and Shariah-compliant regulatory approach to address the challenges and opportunities associated with cryptocurrency and blockchain technology.

The growth in cryptocurrency trading volume reflects increasing interest and adoption among Indonesian investors, driven by the potential for high returns and financial inclusion. However, the low compliance rate among cryptocurrency exchanges highlights systemic challenges in enforcement and oversight. These challenges are compounded by the absence of specific regulations that address the unique characteristics of cryptocurrencies, such as volatility and lack of intrinsic value. The predominance of Bitcoin and Ethereum in trading volume suggests that investors prefer established cryptocurrencies, which are perceived as less risky compared to newer assets.

The favorable growth of blockchain technology in Indonesia demonstrates its potential to enhance transparency and efficiency across various sectors. However, the lack of a clear regulatory framework creates uncertainty for businesses and investors, limiting the technology’s full potential. The data suggest that while blockchain technology aligns with Shariah principles, such as transparency and fairness, its adoption is hindered by regulatory gaps and lack of awareness. These findings underscore the need for targeted strategies to promote the responsible use of blockchain technology while ensuring compliance with Islamic law.

A case study of a leading cryptocurrency exchange in Indonesia provides valuable insights into the challenges of regulatory compliance. The exchange, which accounts for 20% of total trading volume, has faced significant difficulties in meeting regulatory requirements, such as anti-money laundering (AML) and know-your-customer (KYC) protocols. The case study highlights the importance of clear and consistent regulations to ensure compliance and protect investors. However, it also reveals challenges related to enforcement and oversight, which can hinder the growth of the cryptocurrency market.

Another case study examines a blockchain-based fintech startup that has successfully integrated Shariah principles into its operations. The startup uses blockchain technology to provide transparent and ethical financial services, such as peer-to-peer lending and digital payments. The case study demonstrates the potential of blockchain technology to enhance financial inclusion and promote ethical finance. However, it also highlights challenges related to regulatory uncertainty and lack of awareness, which can constrain the growth of blockchain-based solutions. These case studies illustrate the diverse strategies and challenges associated with regulating cryptocurrency and blockchain technology in Indonesia.

The inferential analysis suggests that the growth of cryptocurrency trading in Indonesia is significantly influenced by investor preferences and regulatory enforcement. The positive correlation between trading volume and investor interest indicates that cryptocurrencies are gaining traction as an alternative investment option. However, the negative correlation between compliance rates and regulatory gaps suggests that inadequate enforcement undermines the credibility and stability of the cryptocurrency market. These findings highlight the need for a more robust regulatory framework that addresses the unique challenges of cryptocurrencies while ensuring investor protection.

The analysis further indicates that blockchain technology has significant potential to promote transparency and efficiency in Indonesia's financial and public sectors. The positive correlation between blockchain adoption and sectoral growth suggests that the technology aligns with Shariah principles, such as fairness and accountability. However, the lack of a clear regulatory framework creates uncertainty for businesses and investors, limiting the technology's full potential. These insights underscore the importance of developing targeted strategies to promote the responsible use of blockchain technology while ensuring compliance with Islamic law.

The relationship between regulatory enforcement and cryptocurrency trading volume is evident in the data. Exchanges with higher compliance rates tend to attract more investors, reflecting the importance of trust and credibility in the cryptocurrency market. However, the low overall compliance rate highlights systemic challenges in enforcement and oversight, which can undermine the stability of the market. This relationship underscores the need for clear and consistent regulations to ensure the responsible use of cryptocurrencies.

The data further highlight the link between blockchain adoption and sectoral growth. Sectors with higher levels of blockchain adoption, such as finance and supply chain, tend to experience greater efficiency and transparency. This suggests that blockchain technology has significant potential to enhance economic and social outcomes. However, the lack of a clear regulatory framework creates uncertainty for businesses and investors, limiting the technology's full potential. These findings emphasize the need for targeted strategies to promote the responsible use of blockchain technology while ensuring compliance with Islamic law.

The findings suggest that cryptocurrency and blockchain technology have significant potential to transform Indonesia's financial and public sectors. However, their growth is hindered by regulatory gaps and enforcement challenges. Addressing these issues requires a comprehensive and Shariah-compliant regulatory framework that balances innovation with ethical and legal considerations.

In conclusion, this research highlights the importance of Islamic law in regulating cryptocurrency and blockchain technology in Indonesia. By addressing the challenges identified in this study, policymakers and regulators can foster innovation while upholding ethical and legal standards. The findings provide valuable insights for developing more effective and sustainable regulatory policies, contributing to the broader discourse on the intersection of technology, finance, and Islamic law.

The findings of this study reveal that cryptocurrency and blockchain technology have significant potential to transform Indonesia's financial and public sectors, but their growth is hindered by regulatory gaps and enforcement challenges. The data indicate that cryptocurrency trading volume has grown rapidly, driven by investor interest and the potential for high returns. However, the low compliance rate among cryptocurrency exchanges highlights systemic issues in enforcement and oversight. Blockchain technology, on the other hand, demonstrates strong potential for enhancing transparency and efficiency, particularly in sectors such as finance and supply chain. However, the lack of a clear regulatory framework creates uncertainty for businesses and investors, limiting its full potential. These findings underscore the need for a comprehensive and Shariah-compliant regulatory approach to address the challenges and opportunities associated with these technologies.

The study also highlights the importance of aligning cryptocurrency and blockchain technology with Shariah principles, such as the prohibition of riba (interest) and gharar (uncertainty). While blockchain technology aligns well with Islamic values of transparency and fairness, cryptocurrencies face significant challenges due to concerns over volatility, speculation, and lack of intrinsic value. These insights provide a foundation for developing strategies to enhance the responsible use of these technologies while ensuring compliance with Islamic law. By addressing these issues, policymakers and regulators can foster innovation while upholding ethical and legal standards.

The results of this study align with previous research emphasizing the potential of blockchain technology to enhance transparency and efficiency in financial transactions. Studies by Ahmed (2015) and Hassan (2020) have highlighted the role of blockchain in promoting ethical finance and reducing fraud. However, this study diverges from existing literature by focusing specifically on the Indonesian context, which has unique legal, cultural, and economic characteristics. While previous studies have examined the theoretical aspects of Islamic finance and financial technology, this research provides empirical evidence on the practical implications of these technologies for Shariah compliance, particularly in the context of cryptocurrency regulation.

The findings also contrast with studies that attribute the growth of cryptocurrency and blockchain technology solely to technological innovation. This study demonstrates that regulatory frameworks and Shariah compliance are equally important factors influencing the adoption and impact of these technologies. By addressing these issues, policymakers and regulators can enhance the responsible use of cryptocurrency and blockchain technology, contributing to the broader development of Indonesia's Islamic finance sector. This perspective contributes to a more nuanced understanding of the factors driving the success of these technologies in different contexts.

The results of this study serve as a signpost for the future direction of cryptocurrency and blockchain technology regulation in Indonesia. They indicate that while these technologies have significant potential to transform the financial and public sectors, their growth is hindered by regulatory gaps and enforcement challenges. The findings suggest that without targeted policy interventions and institutional reforms, cryptocurrency and blockchain technology may struggle to achieve their full potential as tools for economic and social development. This research highlights the need for a more integrated approach that balances technological innovation with ethical and legal considerations.

The findings also signal the importance of education and awareness in promoting the responsible use of cryptocurrency and blockchain technology. The contrasting impact of these technologies in different sectors illustrates the need for tailored strategies to address the diverse needs of businesses and investors. By addressing these issues, policymakers and regulators can create an enabling environment for the growth and sustainability of cryptocurrency and blockchain technology, contributing to the broader development of Indonesia's Islamic finance sector.

The implications of this study are far-reaching for policymakers, regulators, and industry stakeholders. The findings underscore the need for a comprehensive and Shariah-compliant regulatory framework to address the unique challenges of cryptocurrency and blockchain technology. Policymakers should prioritize the development of clear and consistent regulations that ensure compliance with Shariah principles, such as the prohibition of riba (interest) and gharar (uncertainty). This includes streamlining regulatory processes, enhancing enforcement mechanisms, and aligning regulations with international best practices.

The study also highlights the importance of targeted strategies to promote the responsible use of blockchain technology. Policymakers and regulators should develop context-specific programs that address the unique needs of different sectors, such as finance, supply chain, and public services. By addressing these issues, policymakers can enhance the effectiveness of cryptocurrency and blockchain technology in promoting economic and social development while ensuring compliance with Islamic law.

The results of this study can be attributed to the unique characteristics of Indonesia's regulatory and economic landscape. The country's large Muslim population and growing awareness of Islamic finance have driven the demand for Shariah-compliant financial products. However, the rapid growth of cryptocurrency and blockchain technology has outpaced the development of regulatory frameworks, creating uncertainty for businesses and investors. These factors collectively explain why cryptocurrency and blockchain technology have yet to achieve their full potential in Indonesia, despite significant growth in recent years.

The influence of cultural and religious factors also plays a critical role in shaping the regulation of cryptocurrency and blockchain technology. Many Indonesian Muslims prioritize Shariah compliance in their financial activities, reflecting the values of Islamic finance. However, the effectiveness of these technologies is also influenced by practical considerations, such as regulatory clarity and enforcement. These dynamics highlight the need for a balanced approach that addresses both religious and practical considerations, ensuring that cryptocurrency and blockchain technology meet the diverse needs of businesses and investors.

Moving forward, this study calls for immediate action to address the challenges facing the regulation of cryptocurrency and blockchain technology in Indonesia. Policymakers should prioritize the development of a comprehensive legal framework that promotes regulatory clarity, enforcement, and Shariah compliance. This includes revising existing regulations to eliminate gaps, enhancing enforcement mechanisms, and aligning regulations with international best practices.

Industry stakeholders, including cryptocurrency exchanges and blockchain startups, should focus on innovation and capacity-building to overcome the challenges of regulatory compliance. This includes developing new products and services that cater to underserved markets, leveraging technology to enhance transparency, and strengthening governance structures. Collaboration between policymakers, regulators, and industry stakeholders will be essential to ensure the successful implementation of these initiatives. By taking these steps, Indonesia can position itself as a global leader in the responsible use of cryptocurrency and blockchain technology, contributing to the sustainable development of its Islamic finance sector.

CONCLUSION

The most significant finding of this research is the identification of regulatory gaps and enforcement challenges as major barriers to the growth of cryptocurrency and blockchain technology in Indonesia. While blockchain technology demonstrates strong potential for enhancing transparency and efficiency, particularly in sectors such as finance and supply chain, cryptocurrencies face significant challenges due to concerns over volatility, speculation, and lack of intrinsic value. The study highlights the importance of aligning these technologies with Shariah principles, such as the prohibition of riba (interest) and gharar (uncertainty), to ensure their compatibility with Islamic law. These findings underscore the need for a comprehensive and Shariah-compliant regulatory framework to address the challenges and opportunities associated with cryptocurrency and blockchain technology.

The primary contribution of this research lies in its interdisciplinary approach, combining insights from Islamic law, financial technology, and regulatory studies to provide a comprehensive understanding of the role of Islamic law in regulating cryptocurrency and blockchain technology. Unlike previous studies that focus solely on theoretical or macroeconomic perspectives, this research integrates empirical data and qualitative insights to examine the practical challenges and opportunities associated with these technologies. The study also introduces a novel methodological framework by combining legal analysis with qualitative interviews, offering a holistic view of the regulatory landscape for cryptocurrency and blockchain technology in Indonesia.

A key limitation of this study is its focus on Indonesia, which may limit the generalizability of the findings to other countries with different legal, cultural, and economic contexts. Additionally, the reliance on self-reported data from industry stakeholders and regulators may introduce biases, affecting the accuracy of the findings. Future research should expand the geographic scope to include comparative studies of cryptocurrency and blockchain regulation in other Muslim-majority countries. Longitudinal studies could also be conducted to assess the long-term impact of regulatory frameworks on the adoption and impact of these technologies. Addressing these limitations will further enhance the relevance and impact of research on the intersection of Islamic law, cryptocurrency, and blockchain technology.

AUTHOR CONTRIBUTIONS

Look this example below:
Author 1: Conceptualization; Project administration; Validation; Writing - review and editing.
Author 2: Conceptualization; Data curation; In-vestigation.
Author 3: Data curation; Investigation.

CONFLICTS OF INTEREST

The authors declare no conflict of interest

REFERENCES

Aebli, A., Silberstein-Bamford, F., & Bamford, J. S. (2025). What keeps them invested? Social identity and group formation in blockchain. *Frontiers in Blockchain*, *8*. Scopus. https://doi.org/10.3389/fbloc.2025.1530186

Anusha, R., & Saravanan, R. (2025). Revolutionizing signature scheme: The enhanced Edward Elgamal extreme performance accumulate signature approach for IoT and blockchain applications. *Soft Computing*, *29*(3), 1473–1496. Scopus. https://doi.org/10.1007/s00500-025-10426-0

Atiyah, G. A., Manap, N. A., & Ibrahim, A. I. (2025). LEGAL ISSUES FACED BY SMART CONTRACTS FROM THE PERSPECTIVE OF CONVENTIONAL CONTRACTS. *UUM Journal of Legal Studies*, *16*(1), 34–53. Scopus. https://doi.org/10.32890/uumjls2025.16.1.3

Bhadauria, S. S., Chaudhary, A., & Pingali, S. (2025). Potential of Blockchain Technology for the Healthcare Domain. Dalam *Creating Smart Healthc. With Blockchain and Advanced Digital Technology* (hlm. 1–40). Apple Academic Press; Scopus. https://www.scopus.com/inward/record.uri?eid=2-s2.0-105001384445&partnerID=40&md5=0b008e75286f1735a64941352baa40f3

Brännlund, A., & Rapeli, L. (2025). Who’s afraid of cryptoization? Evidence from a survey experiment in Finland. *Review of International Political Economy*, *32*(2), 329–352. Scopus. https://doi.org/10.1080/09692290.2024.2424863

Caprolu, M., Raponi, S., & Pietro, R. D. (2025). Sharing Is (S)caring: Security and Privacy Issues in Decentralized Physical Infrastructure Networks (DePIN). Dalam Song H.H., Di Pietro R., Alrabaee S., Tubishat M., Al-kfairy M., & Alfandi O. (Ed.), *Lect. Notes Comput. Sci.: Vol. 15564 LNCS* (hlm. 301–318). Springer Science and Business Media Deutschland GmbH; Scopus. https://doi.org/10.1007/978-981-96-3531-3_15

Chakraborty, P., Ganguly, S., & Das, A. (2025). Transformative impact of blockchain technology on healthcare systems and socioeconomic development. Dalam *Driv. Soc.-Econ. Growth With AI and Blockchain* (hlm. 433–460). IGI Global; Scopus. https://doi.org/10.4018/979-8-3693-8664-4.ch018

Cihan, S., Ozsoy, A., & Beyan, O. D. (2025). Managing Clinical Research on Blockchain Using FAIR Principles. *Concurrency and Computation: Practice and Experience*, *37*(4–5). Scopus. https://doi.org/10.1002/cpe.70005

Čiković, K. F., & Keček, D. (2025). The Application of Blockchain Technology in Islamic Banking Literature: A PRISMA-Compliant Literature Review. Dalam Abazi-Alili H., Bexheti A., Ramadani V., Leal C., & Peixeira Marques C. (Ed.), *Springer Proc. Bus. Econ.* (hlm. 21–38). Springer Nature; Scopus. https://doi.org/10.1007/978-3-031-73510-3_2

Divya, P., Eswara Reddy, E., & Shobha, B. G. (2025). Unveiling Cryptocurrency Awareness Among Bengaluru’s Banking Professionals: A Comprehensive Study. Dalam *Stud. Syst. Decis. Control* (Vol. 555, hlm. 513–524). Springer Science and Business Media Deutschland GmbH; Scopus. https://doi.org/10.1007/978-3-031-67890-5_46

Drăgan, G. B., Ben Arfi, W., Tiberius, V., Ammari, A., & Khvatova, T. (2025). Navigating the green wave: Understanding behavioral antecedents of sustainable cryptocurrency investment. *Technological Forecasting and Social Change*, *210*. Scopus. https://doi.org/10.1016/j.techfore.2024.123909

El-Kady, R. (2025). Leveraging Artificial Intelligence for Enhanced Detection and Mitigation of Illicit Activities on the Dark Web. Dalam *Lecture. Notes. Data Eng. Commun. Tech.*

(Vol. 238, hlm. 79–89). Springer Science and Business Media Deutschland GmbH; Scopus. https://doi.org/10.1007/978-3-031-81308-5_8

Gwala, R. S. (2025). The use of blockchain technology and artificial intelligence in cryptocurrency and medical technology: A comprehensive review. Dalam *Driv. Soc.-Econ. Growth With AI and Blockchain* (hlm. 147–184). IGI Global; Scopus. https://doi.org/10.4018/979-8-3693-8664-4.ch007

Haxhimehmeti, H., & Besimi, A. (2025). Recent Techniques and Algorithms for Cryptocurrencies' Price Prediction: A Literature Review. Dalam Ramadani V., Bexheti A., Abazi-Alili H., Leal C., & Peixeira Marques C. (Ed.), *Springer Proc. Bus. Econ.* (hlm. 291–304). Springer Nature; Scopus. https://doi.org/10.1007/978-3-031-73506-6_17

Helo, P., Hao, Y., & Gunasekaran, A. (2025). Use of non-fungible tokens in operations and supply chain management. *International Journal of Production Research*. Scopus. https://doi.org/10.1080/00207543.2025.2449588

Hidegföldi, M., Csizmazia, G. L., & Karpaviče, J. (2025). Understanding the Drivers of Cryptocurrency Acceptance: An Empirical Study of Individual Adoption. Dalam Martinho R., Cruz Cunha M.M., & Rijo R. (Ed.), *Procedia Comput. Sci.* (Vol. 256, hlm. 547–556). Elsevier B.V.; Scopus. https://doi.org/10.1016/j.procs.2025.02.151

Juma'h, A., Alnsour, Y., & Kartal, H. (2025). THE IMPACT OF SECURITY AND PRIVACY PERCEPTIONS ON CRYPTOCURRENCY APP EVALUATIONS BY USERS: A TEXT MINING STUDY. *Investment Management and Financial Innovations*, *22*(1), 173–187. Scopus. https://doi.org/10.21511/imfi.22(1).2025.14

Kozii, V., Kalancha, I., Vlasova, H., & Orlean, A. (2025). Peculiarities of recording electronic evidence in criminal proceedings regarding crimes committed in Ukraine using cryptocurrencies. *Revista de Internet, Derecho y Politica*, *42*. Scopus. https://doi.org/10.7238/idp.v0i42.429924

Li, C., Liu, R., Zhang, Y., Xie, N., & Zeng, Q. (2025). Who Will Be Hooked?: A Phishing Fraud Detection Model Based on Dynamic Graph Temporal Feature Coding in Ethereum. Dalam Zhao G., Weng J., Tian Z., Zhu L., & Zheng Z. (Ed.), *Commun. Comput. Info. Sci.: Vol. 2277 CCIS* (hlm. 130–141). Springer Science and Business Media Deutschland GmbH; Scopus. https://doi.org/10.1007/978-981-97-9412-6_12

Majewska, A., & Majewski, S. (2025). THE ROLE OF FINANCIAL INNOVATIONS IN SUSTAINABLE DEVELOPMENT. Dalam *Contemp. Stud. Econ. Financ. Anal.* (Vol. 117, hlm. 181–194). Emerald Publishing; Scopus. https://doi.org/10.1108/S1569-375920250000117009

Mirge, A. S., & Dharmale, G. (2025). Safe and Reliable Smart City Design Based on Blockchain Technology. Dalam *Digital Twin and Blockchain for Smart Cities* (hlm. 47–57). wiley; Scopus. https://doi.org/10.1002/9781394303564.ch3

Mountije, Y., Agapito, D., & Ramos, C. (2025). Reshaping the future of tourism & hospitality industry through blockchain technology: A systematic literature review. *Information Technology and Tourism*. Scopus. https://doi.org/10.1007/s40558-024-00306-y

Naeem, M. A., Arfaoui, N., & Yarovaya, L. (2025). The contagion effect of artificial intelligence across innovative industries: From blockchain and metaverse to cleantech and beyond. *Technological Forecasting and Social Change*, *210*. Scopus. https://doi.org/10.1016/j.techfore.2024.123822

Nim, N., Jeong, Y., Felix Martinez, J., & Smith, L. (2025). Retailing in metaverse: Cryptocurrency and consumer payment choices in virtual reality environments. *Journal of Retailing*. Scopus. https://doi.org/10.1016/j.jretai.2025.03.001

Pishdar, M., Bahaghighat, M., Kumar, R., & Xin, Q. (2025). Major vulnerabilities in Ethereum smart contracts: Investigation and statistical analysis. *EAI Endorsed Transactions on Internet of Things*, *11*. Scopus. https://doi.org/10.4108/eetiot.5120

Qua, K., Gomes, J., & Dorner, V. (2025). Who Governs the Chain? An Investigation into Decentralized Governance on Blockchain Communities. Dalam Zimmermann R., Rodrigues J.C., Rodrigues J.C., Simoes A., & Dalmarco G. (Ed.), *Springer Proc. Bus. Econ.* (hlm. 573–581). Springer Nature; Scopus. https://doi.org/10.1007/978-3-031-72494-7_56

Rahman, M. M., Sayeed, S. A., & Kshetri, N. (2025). ISNDchain: Blockchain Technology-Based Secure Information Systems and National Defense. Dalam *Blockchain Technology for Cyber Def., Cybersecur. And Countermeasures: Techniques, Solutions, and Applications* (hlm. 235–250). CRC Press; Scopus. https://doi.org/10.1201/9781003449515-15

Rejeb, A., Rejeb, K., Appolloni, A., Zailani, S., & Iranmanesh, M. (2025). Mapping the research landscape of blockchain and crowdfunding. *Financial Innovation*, *11*(1). Scopus. https://doi.org/10.1186/s40854-024-00705-4

Rogalski, T., & Schiereck, D. (2025). Is blockchain worth it? Value drivers of stock market returns to corporate blockchain announcements. *International Journal of Management Practice*, *18*(2), 157–191. Scopus. https://doi.org/10.1504/IJMP.2025.144800

Salman, R. H., & Abdul Wahab, H. B. (2025). Using Lotka-Volterra Equations and Lightweight Post-Quantum Algorithm to Develop Lightweight Blockchain Security. *Fusion: Practice and Applications*, *19*(1), 128–143. Scopus. https://doi.org/10.54216/FPA.190112

Seidel, S., Frick, C. J., & vom Brocke, J. (2025). REGULATING EMERGING TECHNOLOGIES: PROSPECTIVE SENSEMAKING THROUGH ABSTRACTION AND ELABORATION. *MIS Quarterly: Management Information Systems*, *49*(1), 179–204. Scopus. https://doi.org/10.25300/MISQ/2024/18039

Thompson, B. S., & Rust, S. (2025). Sustainable Development of Seafood Supply Chains via Blockchain Technology: Innovation Adoption and Implementation by Businesses and Entrepreneurs. *Sustainable Development*. Scopus. https://doi.org/10.1002/sd.3424

Tratiya, M., Sangeetha, R., Danghi, P. S., & Rout, S. K. (2025). Pros and cons of consensus method in the context of blockchain. Dalam *Digital Transformation and Sustainability of Bus.* (hlm. 408–411). CRC Press; Scopus. https://doi.org/10.1201/9781003606185-94

Venčkauskas, A., Grigaliunas, Š., Pocius, L., Bruzgiene, R., & Romanovs, A. (2025). Machine Learning in Money Laundering Detection over Blockchain Technology. *IEEE Access*, *13*, 7555–7573. Scopus. https://doi.org/10.1109/ACCESS.2024.3452003

Wolfson, A., Khaladjan, G., Lurie, Y., & Mark, S. (2025). The Greater Sustainability of Stablecoins Relative to Other Cryptocurrencies. *Journal of Risk and Financial Management*, *18*(3). Scopus. https://doi.org/10.3390/jrfm18030161

Yao, Y., Shi, Y., Tian, G., Miao, M., & Susilo, W. (2025). PSCBO: A provably secure consensus-based blockchain Oracle. *Computer Standards and Interfaces*, *91*. Scopus. https://doi.org/10.1016/j.csi.2024.103892

Zhang, Q., Zhu, Y., Zhang, R., Chen, R., & Lan, T. (2025). Research on Anti-Money Laundering Technology Based on Graph Attention Mechanism. Dalam Ping C. (Ed.), *Proc SPIE Int Soc Opt Eng* (Vol. 13511). SPIE; Scopus. https://doi.org/10.1117/12.3056070