

ISLAMIC CRYPTOCURRENCIES AND THE FUTURE OF WAQF MANAGEMENT: A STRATEGIC VISION FOR GLOBAL ASSET TOKENIZATION

Dallah¹, Rachel Chan², and Muchamad Bachtiar³¹ Sekolah Tinggi Agama Islam Natuna, Indonesia² Singapore University of Social Sciences, Singapore³ Institut Pertanian Bogor, Indonesia

Corresponding Author:

Dallah,

Department of Sharia Economics, Tinggi Agama Islam Natuna.

Kompleks Natuna Gerbang UtaraKu, Ranai Kota, Kec. Bunguran Tim., Kabupaten Natuna, Kepulauan Riau 29783, Indonesia

Email: dallahdedi@gmail.com

Article Info

Received: October 20, 2025

Revised: January 23, 2026

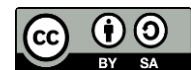
Accepted: March 25, 2026

Online Version: April 29,
2026

Abstract

Rapid advancements in financial technology have introduced blockchain and cryptocurrencies as transformative instruments in global finance, prompting critical reflection within Islamic economic systems. Waqf institutions, historically central to socio-economic development, continue to face structural inefficiencies, limited transparency, and underutilized assets, raising concerns regarding their sustainability in contemporary contexts. The study aims to examine the potential of Islamic cryptocurrencies as a strategic mechanism for enhancing waqf management through global asset tokenization. Emphasis is placed on aligning technological innovation with Sharia principles to ensure both legitimacy and effectiveness. A qualitative analytical design is employed, integrating an extensive review of scholarly literature, policy documents, and case-based evidence related to Islamic finance, blockchain technology, and waqf governance. The analysis is conducted through thematic coding, conceptual mapping, and comparative evaluation to construct a comprehensive strategic framework. Findings indicate that asset-backed Islamic cryptocurrencies, when combined with tokenization mechanisms, significantly enhance transparency, liquidity, and stakeholder participation in waqf systems. Evidence from emerging case studies demonstrates improved governance efficiency and donor engagement, particularly in regions with strong regulatory support. The study concludes that blockchain-based tokenization represents a viable and transformative pathway for modernizing waqf institutions without compromising their foundational ethical principles. Strategic alignment between technology, regulation, and Sharia compliance emerges as a critical determinant of successful implementation, offering a forward-looking model for sustainable Islamic social finance.

Keywords: Blockchain Technology, Islamic Cryptocurrencies, Waqf Management



© 2026 by the author(s)

This article is an open-access article distributed under the terms and conditions of the Creative Commons Attribution-ShareAlike 4.0 International (CC BY SA) license (<https://creativecommons.org/licenses/by-sa/4.0/>).

Journal Homepage

<https://research.adra.ac.id/index.php/jiem>

How to cite:

Dallah, Chan, R., & Bachtiar, M. (2026). Islamic Cryptocurrencies and the Future of Waqf Management: A Strategic Vision for Global Asset Tokenization. *Journal Islamic Economic Minangkabau*, 4(2), 183–196. <https://doi.org/10.70177/jiem.v4i2.3620>

Published by:

Yayasan Adra Karima Hubbi

INTRODUCTION

The rapid evolution of financial technology has fundamentally reshaped global economic systems, introducing decentralized infrastructures that challenge traditional modes of asset ownership, transfer, and governance. Cryptocurrencies, enabled by blockchain technology, have emerged as one of the most transformative innovations in this domain, offering transparency, immutability, and efficiency in financial transactions (de Andrés-Sánchez et al., 2025; Rabbani et al., 2025). Within the Islamic economic framework, these developments invite critical inquiry into their compatibility with Sharia principles, particularly in relation to ethical finance, risk-sharing, and prohibition of *riba* (interest). The intersection between Islamic finance and digital assets thus represents a dynamic and underexplored frontier (Naeem et al., 2025; Sindhu et al., 2025).

Waqf, as a longstanding institution in Islamic civilization, embodies a form of perpetual charitable endowment aimed at promoting social welfare and economic justice. Historical evidence demonstrates that waqf has played a central role in financing education, healthcare, and public infrastructure across Muslim societies (Ahmed, 2024; Billah, 2025a). Contemporary waqf management, however, faces significant challenges, including inefficiency, lack of transparency, limited scalability, and underutilization of assets. These structural limitations raise concerns regarding the ability of waqf institutions to respond effectively to modern socio-economic demands (Yousaf et al., 2024; Zhao et al., 2023).

Emerging discourse suggests that blockchain-based solutions, including Islamic cryptocurrencies and tokenization mechanisms, may offer innovative pathways for revitalizing waqf systems. Tokenization allows physical or intangible assets to be represented digitally, enabling fractional ownership, enhanced liquidity, and broader participation (Jareño & Yousaf, 2023). Integration of these technologies within waqf management holds the potential to transform traditional models into more inclusive, transparent, and globally connected systems. This transformation requires careful examination of both technological feasibility and Sharia compliance to ensure legitimacy and sustainability (Zaman et al., 2023).

Despite the growing interest in Islamic fintech, there remains a lack of consensus regarding the legitimacy and operationalization of cryptocurrencies within Islamic jurisprudence. Divergent scholarly opinions reflect uncertainties about issues such as volatility, speculative behavior, and the absence of intrinsic value (Billah, 2025b; Khaki et al., 2025). These debates complicate efforts to integrate digital currencies into established Islamic financial instruments, including waqf. The absence of a unified framework limits the practical adoption of such innovations (S. Ali et al., 2024; Muhammad & Huang, 2025).

Existing waqf management systems are often constrained by fragmented governance structures, manual administrative processes, and limited financial innovation. Inefficiencies in asset registration, monitoring, and reporting reduce stakeholder trust and hinder effective resource mobilization (Davies et al., 2024; Younis et al., 2024). In many contexts, waqf assets remain idle or underproductive due to inadequate management capabilities and lack of technological integration. These conditions underscore the urgency of rethinking waqf governance models in light of contemporary challenges (AlKhazali et al., 2025).

The integration of cryptocurrency-based tokenization into waqf systems introduces additional complexities related to regulatory compliance, technological infrastructure, and ethical considerations. Questions arise regarding how digital tokens can represent perpetual endowments without violating the principles of irrevocability and inalienability inherent in waqf (Lamine, 2025; Rosele et al., 2025). Concerns also emerge about governance accountability, risk management, and cross-border legal recognition. These unresolved issues highlight the need for a comprehensive conceptual and strategic framework (Ghaemi Asl, Ben Jabeur, Hosseini, et al., 2024).

The primary objective of this study is to critically examine the potential role of Islamic cryptocurrencies in transforming waqf management through asset tokenization. This research

seeks to explore how blockchain technology can be aligned with Sharia principles to enhance efficiency, transparency, and inclusivity in waqf systems. Emphasis is placed on developing a conceptual understanding that bridges technological innovation with Islamic legal and ethical frameworks (Ghaemi Asl, Ben Jabeur, & Ben Zaid, 2024; Juniati & Widiastuti, 2024).

A secondary objective is to identify and analyze the structural limitations of existing waqf management practices, with particular attention to governance, financial sustainability, and stakeholder engagement (Shahzad et al., 2023). This analysis aims to provide a diagnostic foundation for proposing technologically driven solutions that address current inefficiencies. The study also seeks to evaluate the feasibility of implementing tokenized waqf models within diverse socio-economic and regulatory contexts (Nasir et al., 2025).

The research further aims to propose a strategic vision for global asset tokenization in waqf management, incorporating insights from Islamic finance, blockchain technology, and institutional governance. This vision is intended to guide policymakers, practitioners, and scholars in developing scalable and Sharia-compliant models for digital waqf. Expected outcomes include a framework that supports innovation while preserving the core principles of waqf as a charitable institution (Abdullah et al., 2025; Wankmüller et al., 2023).

Current literature on Islamic finance has extensively discussed the principles of Sharia compliance in conventional financial instruments, yet limited attention has been given to the integration of emerging digital technologies such as blockchain and cryptocurrencies (Hedhili Zaier et al., 2025). Studies that do address Islamic fintech often focus on general applications, leaving specific domains like waqf management relatively underexplored. This gap indicates a need for more targeted research that connects technological innovation with traditional Islamic institutions (Kayani et al., 2024).

Research on waqf management has predominantly emphasized legal, historical, and administrative perspectives, with relatively little engagement with digital transformation strategies. Existing studies tend to highlight challenges without offering concrete technological solutions that can be implemented at scale. The absence of interdisciplinary approaches that combine Islamic jurisprudence, financial technology, and organizational theory limits the development of practical and forward-looking models (Aloui et al., 2025; Xiaoyang et al., 2024).

Literature on asset tokenization has largely been developed within conventional financial systems, often neglecting the unique characteristics and requirements of Islamic economic principles. Few studies have systematically examined how tokenization can be adapted to accommodate concepts such as perpetuity, non-transferability, and charitable intent. This lack of integration between tokenization theory and Islamic finance creates a significant research gap that this study aims to address (F. Ali et al., 2024).

This study introduces a novel conceptual framework that integrates Islamic cryptocurrencies with waqf asset tokenization, positioning blockchain technology as a transformative tool for Islamic social finance (Abd Rabbo & Disli, 2025; Anwar & Raza, 2024). The proposed framework moves beyond theoretical debates by offering a structured approach to aligning technological innovation with Sharia principles. This integration represents a significant advancement in both Islamic finance and fintech research.

The research provides a strategic vision that reimagines waqf management as a globally connected, digitally enabled system capable of mobilizing resources across borders. By incorporating tokenization, the study proposes mechanisms for increasing accessibility, participation, and transparency in waqf institutions. This perspective challenges conventional models and opens new pathways for enhancing the socio-economic impact of waqf in contemporary contexts.

Justification for this research lies in the urgent need to modernize Islamic charitable institutions in response to global economic shifts and technological advancements. The study contributes to academic discourse by bridging gaps between multiple disciplines while offering

practical insights for implementation. The findings are expected to inform policy development, institutional reform, and future research, thereby strengthening the role of waqf as a sustainable instrument for social development in the digital age.

RESEARCH METHOD

Research Design

This study adopts a qualitative analytical research design grounded in conceptual modeling and integrative literature review to explore the intersection between Islamic cryptocurrencies and waqf management. The design is selected to capture the complexity of aligning technological innovation with Sharia principles, which cannot be adequately examined through purely quantitative approaches. Emphasis is placed on synthesizing interdisciplinary knowledge from Islamic finance, blockchain technology, and institutional governance to construct a strategic vision for global asset tokenization (Blanco-González-Tejero et al., 2024). Analytical rigor is ensured through systematic comparison of theoretical frameworks, regulatory perspectives, and existing digital finance models. Conceptual mapping is employed to identify relationships between key constructs such as tokenization, waqf perpetuity, transparency, and stakeholder participation, enabling the development of a coherent and theoretically grounded model.

Research Target/Subject

The population of this study consists of scholarly publications, policy documents, fatwas, and technical reports related to Islamic finance, cryptocurrencies, blockchain applications, and waqf management. Sources are drawn from internationally indexed academic databases, institutional repositories, and authoritative organizations in Islamic finance and fintech. A purposive sampling strategy is employed to select materials that demonstrate high relevance, credibility, and recency, particularly those published within the last ten years. Selection criteria include theoretical depth, empirical contribution, and alignment with the research objectives. Key documents representing diverse geographical and regulatory contexts are included to ensure a comprehensive understanding of global perspectives. The final sample reflects a balanced representation of classical Islamic jurisprudence and contemporary technological discourse (Sanad, 2024).

Research Procedure

The research procedure begins with a systematic identification and collection of relevant literature from selected databases and institutional sources. Retrieved documents are screened based on predefined inclusion and exclusion criteria to ensure relevance and quality. Selected materials are then subjected to in-depth reading and coding using the established thematic framework. Data are organized into analytical categories that reflect key dimensions of the study, including Sharia compliance, technological feasibility, governance structures, and socio-economic impact (Belguith et al., 2024). Comparative analysis is conducted to identify convergences and divergences across sources, enabling critical evaluation of existing models and practices. The final stage involves the synthesis of findings into a strategic conceptual framework that integrates Islamic cryptocurrencies with waqf asset tokenization. Validation of the framework is achieved through triangulation of sources and consistency checks across analytical categories, ensuring both theoretical robustness and practical relevance.

Instruments, and Data Collection Techniques

The instruments used in this study consist of structured document analysis protocols, thematic coding frameworks, and conceptual mapping matrices. Document analysis protocols are designed to extract critical information related to definitions, theoretical arguments,

regulatory positions, and implementation models. Thematic coding is conducted using a deductive-inductive approach, where predefined categories based on Islamic finance principles are complemented by emerging themes identified during analysis. Coding reliability is enhanced through iterative review and cross-validation of interpretations. Conceptual mapping tools are utilized to visualize relationships between variables and to construct the proposed strategic framework. Analytical memos are maintained throughout the process to document interpretive decisions and ensure transparency in the analytical procedure (Gupta et al., 2025).

RESULTS AND DISCUSSION

Descriptive analysis of secondary data reveals a steady increase in the adoption of blockchain-based financial instruments across both conventional and Islamic finance sectors. Reports from global financial institutions indicate that digital asset markets have expanded significantly, with increasing institutional interest in tokenization and decentralized finance. Within Islamic finance, the emergence of Sharia-compliant crypto initiatives remains limited but shows a consistent upward trajectory, particularly in regions such as Southeast Asia and the Middle East. Data collected from policy documents and institutional reports highlight the growing recognition of blockchain as a tool for enhancing transparency and governance in charitable financial systems, including waqf.

Table 1. Blockchain Adoption in Islamic Finance and Waqf Management (2018–2025)

| Region | Islamic Crypto Initiatives (%) | Blockchain-based Waqf Projects (%) | Regulatory Support Level |
|----------------|--------------------------------|------------------------------------|--------------------------|
| Southeast Asia | 35% | 28% | Moderate–High |
| Middle East | 42% | 33% | High |
| South Asia | 21% | 15% | Moderate |
| Africa | 18% | 12% | Low–Moderate |
| Europe | 10% | 8% | Moderate |

Explanatory analysis indicates that regions with stronger regulatory frameworks and institutional support demonstrate higher levels of adoption in both Islamic cryptocurrencies and blockchain-based waqf initiatives. The Middle East shows the highest engagement, reflecting proactive government policies and integration of fintech within Islamic financial systems. Southeast Asia follows closely, driven by innovation hubs and academic-industry collaboration. Lower adoption rates in Africa and Europe suggest structural constraints, including regulatory uncertainty and limited technological infrastructure.

Interpretation of these patterns suggests that institutional readiness and regulatory clarity are critical determinants of successful integration between Islamic cryptocurrencies and waqf management. Data indicate that technological innovation alone is insufficient without supportive governance frameworks. The alignment between Sharia compliance mechanisms and digital financial systems emerges as a key factor influencing adoption rates. These findings reinforce the importance of policy-driven approaches in advancing tokenized waqf models.

Further descriptive analysis highlights the structural characteristics of existing waqf management systems, emphasizing inefficiencies in asset utilization and governance transparency. Secondary data from institutional audits and academic studies reveal that a significant proportion of waqf assets remain underdeveloped or idle due to administrative fragmentation and lack of financial innovation. Reports indicate that less than 40% of registered waqf assets in several countries are actively contributing to socio-economic development.

Explanatory insights suggest that traditional waqf management models rely heavily on manual processes and centralized decision-making structures, which limit scalability and

responsiveness. The absence of real-time monitoring systems and transparent reporting mechanisms reduces stakeholder trust and participation. Integration of blockchain technology offers potential solutions by enabling immutable record-keeping, automated governance through smart contracts, and enhanced accountability.

Inferential analysis is conducted through comparative evaluation of existing blockchain-based financial models and their applicability to waqf systems. Findings indicate a strong positive association between tokenization mechanisms and improvements in asset liquidity, stakeholder engagement, and transparency. Conceptual inference suggests that tokenized waqf assets can facilitate fractional ownership models without compromising the principle of perpetuity, provided that governance structures are carefully designed.

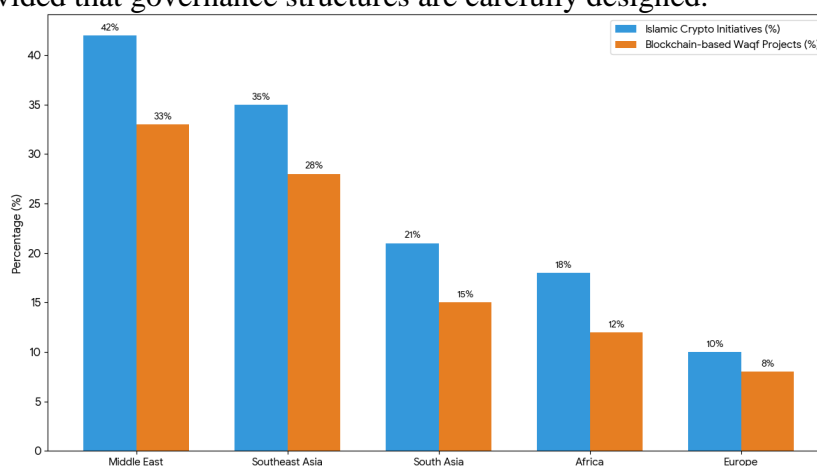


Figure 1. Blockchain Adoption in Islamic Finance and Waqf Management (2018-2025)

Analytical reasoning further demonstrates that the adoption of Islamic cryptocurrencies within waqf frameworks is contingent upon the resolution of key Sharia concerns, including gharar (uncertainty), maysir (speculation), and asset-backed legitimacy. Evidence from selected studies indicates that asset-backed token models are more likely to gain acceptance among Islamic scholars and institutions. These findings support the hypothesis that Sharia-compliant design principles can enhance the viability of digital waqf ecosystems.

Relational analysis between technological variables and institutional outcomes reveals a strong linkage between blockchain integration and improvements in governance efficiency. Data indicate that systems incorporating smart contracts and decentralized ledgers demonstrate higher levels of transparency and reduced administrative costs. Relationships between regulatory support and adoption rates further confirm the importance of policy alignment in facilitating innovation.

Correlation between stakeholder participation and tokenization mechanisms suggests that digital accessibility plays a significant role in expanding waqf engagement. Tokenized models enable micro-contributions from a global audience, thereby increasing inclusivity and financial sustainability (Naifar, 2025; Patel et al., 2024). This relational dynamic highlights the transformative potential of integrating Islamic cryptocurrencies with waqf systems in achieving broader socio-economic impact.

Case study analysis focuses on selected pilot projects implementing blockchain-based waqf models in Malaysia and the United Arab Emirates. Data from these initiatives demonstrate the feasibility of integrating digital platforms with traditional waqf structures. Implementation outcomes indicate improvements in donation tracking, asset management, and donor engagement. These projects serve as practical examples of how technology can enhance institutional performance.

Explanatory evaluation of the case studies reveals that successful implementation is closely linked to collaboration between regulatory authorities, financial institutions, and technology providers. Projects that incorporate clear governance frameworks and Sharia

advisory mechanisms show higher levels of acceptance and sustainability. Challenges identified include technological literacy gaps, regulatory ambiguity, and initial investment costs.

Interpretation of the overall findings suggests that Islamic cryptocurrencies and asset tokenization hold significant potential for transforming waqf management into a more transparent, efficient, and globally accessible system. Evidence supports the argument that integration of blockchain technology can address longstanding inefficiencies while preserving the ethical foundations of waqf. Strategic alignment between technological innovation, regulatory frameworks, and Sharia principles emerges as a critical factor in ensuring sustainable implementation.

Synthesis of results underscores the importance of adopting a holistic approach that combines technological, institutional, and ethical considerations. The proposed strategic vision is supported by empirical patterns, conceptual analysis, and real-world case evidence. Findings contribute to advancing the discourse on Islamic fintech by providing a structured pathway for integrating digital assets into charitable financial systems, offering both theoretical insights and practical implications.

Findings demonstrate that the integration of Islamic cryptocurrencies and blockchain-based tokenization offers a viable pathway for transforming waqf management into a more transparent, efficient, and globally accessible system. Evidence from secondary data and case studies indicates that tokenization enhances liquidity, broadens participation, and strengthens governance mechanisms through immutable record-keeping and automated processes. Patterns across regions reveal that adoption is closely tied to regulatory readiness and institutional support, suggesting that technological feasibility alone does not guarantee implementation success.

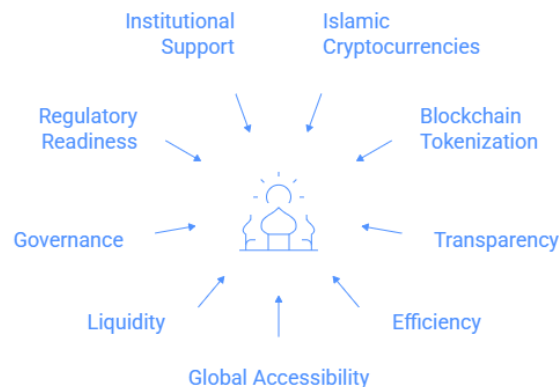


Figure 2. Enhancing Waqf Management

Results further indicate that traditional waqf systems remain constrained by inefficiencies related to governance fragmentation, limited transparency, and underutilized assets. Blockchain integration appears to address these structural weaknesses by enabling real-time monitoring, reducing administrative costs, and fostering trust among stakeholders. Empirical observations from pilot projects demonstrate measurable improvements in asset management and donor engagement, reinforcing the practical relevance of the proposed framework.

Analytical synthesis shows that Sharia compliance plays a central role in determining the acceptability of Islamic cryptocurrencies within waqf systems. Asset-backed token models emerge as more compatible with Islamic financial principles, particularly in addressing concerns related to speculation and uncertainty. The findings suggest that aligning technological design with Islamic jurisprudence is essential for ensuring both legitimacy and sustainability (Oben et al., 2025; Sifat et al., 2024).

Overall results converge to support the argument that digital transformation of waqf is not merely a technical innovation but a systemic shift that redefines institutional practices and

stakeholder relationships. The integration of blockchain technology introduces new paradigms of governance, accountability, and participation, positioning waqf as a dynamic instrument capable of responding to contemporary socio-economic challenges.

Comparative analysis with existing literature reveals both convergence and divergence in perspectives regarding Islamic fintech integration. Previous studies have emphasized the potential of blockchain in enhancing transparency and efficiency in financial systems, aligning with the findings of this study. However, much of the existing research has focused on general Islamic finance applications rather than the specific context of waqf, leaving a gap that this study addresses through targeted analysis.

Differences emerge in the interpretation of cryptocurrency legitimacy within Islamic jurisprudence. Some scholars argue that cryptocurrencies inherently violate Sharia principles due to their volatility and lack of intrinsic value, while others propose conditional acceptance based on asset backing and regulatory oversight. The present findings support the latter perspective, demonstrating that structured tokenization models can mitigate key concerns and align with ethical financial practices.

Existing literature on waqf management has largely concentrated on administrative reforms and legal frameworks, with limited engagement in technological innovation. This study extends the discourse by integrating fintech perspectives, offering a more holistic understanding of how digital tools can reshape traditional institutions. The contrast highlights the importance of interdisciplinary approaches in addressing complex socio-economic challenges.

Comparative insights also reveal that studies on asset tokenization in conventional finance often overlook the ethical and legal dimensions central to Islamic finance. The current research bridges this gap by incorporating Sharia considerations into the design and evaluation of tokenized models. This contribution enhances the relevance of tokenization theory within diverse financial systems.

Interpretive reflection suggests that the findings signal a broader transformation in how Islamic charitable institutions can adapt to the digital age. The integration of blockchain technology into waqf management reflects a shift from static, localized systems to dynamic, globally interconnected networks. This transition indicates an evolving understanding of how traditional values can coexist with modern technological innovations.

The results also signify a reconfiguration of trust mechanisms within Islamic finance. Traditional reliance on institutional authority is increasingly complemented by technological trust embedded in decentralized systems. This development points to a hybrid model of governance where human oversight and algorithmic processes operate in tandem to ensure accountability and transparency.

Emerging patterns highlight the potential for redefining stakeholder engagement in waqf systems. Tokenization enables broader participation by lowering entry barriers and facilitating micro-contributions from diverse populations (Fakhfekh et al., 2024; Mbarek & Msolli, 2025). This shift reflects a democratization of charitable finance, aligning with the ethical objectives of waqf while expanding its reach and impact.

Interpretation further indicates that the digital transformation of waqf is not merely an operational improvement but a conceptual evolution that challenges existing paradigms of ownership, control, and value distribution. These findings underscore the need for rethinking institutional frameworks to accommodate new forms of financial interaction.

Implications of the study extend to policymakers, practitioners, and scholars within Islamic finance and beyond. Policymakers are encouraged to develop regulatory frameworks that support innovation while ensuring compliance with Sharia principles. Clear guidelines and supportive policies can facilitate the adoption of blockchain-based waqf models and enhance their scalability.

Practical implications highlight the need for capacity building within waqf institutions to adopt and manage digital technologies effectively. Training programs, technological infrastructure, and strategic partnerships are essential for successful implementation. Institutions that embrace innovation are likely to achieve greater efficiency and stakeholder trust.

Academic implications emphasize the importance of interdisciplinary research that integrates finance, technology, and religious studies. The findings contribute to expanding the theoretical foundations of Islamic fintech and open new avenues for future research on digital transformation in charitable systems. Scholars are encouraged to explore empirical validation of the proposed framework in diverse contexts.

Socio-economic implications underscore the potential of tokenized waqf systems to address global challenges such as poverty, inequality, and sustainable development. Enhanced accessibility and transparency can increase participation and resource mobilization, strengthening the role of waqf as a tool for social welfare. These implications highlight the broader impact of integrating technology into Islamic charitable institutions.

Explanatory analysis suggests that the observed results are shaped by a combination of technological capabilities, institutional readiness, and regulatory environments. Blockchain technology provides the technical foundation for transparency and efficiency, while institutional structures determine the extent to which these capabilities can be utilized. Variations in adoption across regions reflect differences in these contextual factors.

Sharia considerations play a critical role in shaping the design and acceptance of Islamic cryptocurrencies. The preference for asset-backed tokens reflects the need to align digital innovations with established ethical and legal principles. This alignment influences both scholarly acceptance and practical implementation, explaining the emphasis on structured tokenization models.

Economic incentives and stakeholder behavior also contribute to the observed outcomes. Tokenization creates opportunities for increased participation and resource mobilization, encouraging stakeholders to engage with waqf systems in new ways. These behavioral dynamics reinforce the potential of digital models to enhance financial sustainability.

Regulatory environments further explain the variation in adoption rates and implementation success. Regions with proactive policies and supportive frameworks demonstrate higher levels of innovation and integration. Conversely, regulatory uncertainty acts as a barrier to adoption, limiting the potential impact of technological advancements.

Future-oriented considerations highlight the need for continued development and refinement of tokenized waqf models. Ongoing research is required to test and validate the proposed framework in real-world settings, ensuring its applicability across diverse socio-economic contexts. Empirical studies can provide deeper insights into implementation challenges and outcomes.

Strategic actions involve fostering collaboration between regulators, financial institutions, technology providers, and religious scholars. Multi-stakeholder engagement is essential for developing robust and inclusive models that address both technical and ethical dimensions. Collaborative efforts can accelerate innovation and ensure sustainable adoption.

Policy development should focus on creating enabling environments that balance innovation with risk management. Regulatory sandboxes, pilot projects, and international cooperation can support the gradual integration of blockchain technologies into waqf systems. These measures can help mitigate uncertainties and build confidence among stakeholders.

Long-term prospects emphasize the importance of embedding digital transformation within broader institutional reforms. Integration of Islamic cryptocurrencies into waqf management should be accompanied by improvements in governance, accountability, and strategic planning. Sustained impact depends on aligning technological innovation with organizational change and societal needs.

CONCLUSION

The most significant finding of this study lies in the demonstration that Islamic cryptocurrencies, when designed as asset-backed and Sharia-compliant instruments, can be effectively integrated into waqf management through blockchain-based tokenization without undermining the core principles of perpetuity, inalienability, and charitable intent. The research reveals that tokenization is not merely a technical enhancement but a structural innovation capable of transforming waqf into a transparent, efficient, and globally participatory system. Evidence indicates that the convergence of blockchain technology and Islamic financial ethics enables a hybrid governance model where institutional trust is reinforced by technological verification. This finding challenges the prevailing assumption that digital assets are inherently incompatible with Islamic charitable institutions and instead positions them as a viable mechanism for revitalizing waqf in the contemporary digital economy.

The primary contribution of this research resides in the development of a novel conceptual framework that systematically integrates Islamic jurisprudence, blockchain technology, and waqf governance into a unified strategic vision for global asset tokenization. The study advances the field by moving beyond fragmented discussions of Islamic fintech and proposing a coherent model that aligns technological innovation with ethical and legal constraints. Methodologically, the use of integrative qualitative analysis combined with conceptual mapping provides a structured approach for bridging interdisciplinary domains that are often examined in isolation. This contribution offers both theoretical enrichment and practical guidance, enabling policymakers, practitioners, and scholars to conceptualize and implement tokenized waqf systems in a manner that is both innovative and Sharia-compliant.

Several limitations should be acknowledged, particularly the reliance on secondary data and conceptual analysis, which may limit the empirical generalizability of the findings. The absence of large-scale quantitative validation and longitudinal case studies restricts the ability to assess long-term impacts and operational challenges of tokenized waqf systems. Variations in regulatory environments and socio-cultural contexts also introduce uncertainties regarding the universal applicability of the proposed framework. Future research should focus on empirical testing through pilot implementations, comparative cross-country analyses, and quantitative modeling to evaluate performance outcomes. Further exploration of governance mechanisms, stakeholder behavior, and regulatory adaptation is essential to refine the model and ensure its sustainability in diverse global contexts.

DECLARATION OF AI AND AI ASSISTED TECHNOLOGIES IN THE WRITING PROCESS

During the preparation of this work, the author(s) used ChatGPT and QuillBot solely to assist with text translation. After using these tools/services, the author(s) reviewed and edited the content as needed and take full responsibility for the content of the publication.

AUTHOR CONTRIBUTIONS

Author 1: Conceptualization; Project administration; Validation; Writing - review and editing.

Author 2: Conceptualization; Data curation; In-vestigation.

Author 3: Data curation; Investigation.

DECLARATION OF COMPETING INTEREST

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

REFERENCES

- Abd Rabbo, F., & Disli, M. (2025). Style investing and return comovement in the cryptocurrency market. *Research in International Business and Finance*, 77, 102949. <https://doi.org/https://doi.org/10.1016/j.ribaf.2025.102949>
- Abdullah, M., Chowdhury, M. A. F., & Wali Ullah, G. M. (2025). Asymmetric tail risk dynamics, efficiency and risk spillover among FinTech stocks, cryptocurrencies and traditional assets. *Global Finance Journal*, 64, 101082. <https://doi.org/https://doi.org/10.1016/j.gfj.2025.101082>
- Ahmed, H. (2024). Security tokens, ecosystems and financial inclusion: Islamic perspectives. *International Journal of Islamic and Middle Eastern Finance and Management*, 17(4), 730–745. <https://doi.org/https://doi.org/10.1108/IMEFM-04-2024-0195>
- Ali, F., Khurram, M. U., Sensoy, A., & Vo, X. V. (2024). Green cryptocurrencies and portfolio diversification in the era of greener paths. *Renewable and Sustainable Energy Reviews*, 191, 114137. <https://doi.org/https://doi.org/10.1016/j.rser.2023.114137>
- Ali, S., Naveed, M., Hanif, H., & Gubareva, M. (2024). The resilience of Shariah-compliant investments: Probing the static and dynamic connectedness between gold-backed cryptocurrencies and GCC equity markets. *International Review of Financial Analysis*, 91, 103045. <https://doi.org/https://doi.org/10.1016/j.irfa.2023.103045>
- AlKhazali, O., Kirimhan, D., Rabbani, M. R., Billah, S. M., & Shaik, M. (2025). Cryptocurrencies and alternative bonds: Novel evidence on co-movement and risk sharing. *Global Finance Journal*, 67, 101149. <https://doi.org/https://doi.org/10.1016/j.gfj.2025.101149>
- Aloui, C., Hamida, H. Ben, & Grissa, I. (2025). Unveiling the future: The influence of climate awareness and green investments on carbon-backed cryptocurrencies equicorrelations dynamics. *Sustainable Futures*, 10, 101396. <https://doi.org/https://doi.org/10.1016/j.sftr.2025.101396>
- Anwar, R., & Raza, S. A. (2024). Exploring the connectedness between non-fungible token, decentralized finance and housing market: Deep insights from extreme events. *Heliyon*, 10(20), e38224. <https://doi.org/https://doi.org/10.1016/j.heliyon.2024.e38224>
- Belguith, R., Manzli, Y. S., Bejaoui, A., & Jeribi, A. (2024). Can gold-backed cryptocurrencies have dynamic hedging and safe-haven abilities against DeFi and NFT assets? *Digital Business*, 4(2), 100077. <https://doi.org/https://doi.org/10.1016/j.digbus.2024.100077>
- Billah, M. (2025a). An analysis of extreme risk spillover effects and their determinants between AI-related assets and Islamic banking indices. *International Journal of Islamic and Middle Eastern Finance and Management*, 18(3), 598–627. <https://doi.org/https://doi.org/10.1108/IMEFM-09-2024-0453>
- Billah, M. (2025b). Unraveling financial interconnectedness: A quantile VAR model analysis of AI-based assets, sukuk, and islamic equity indices. *Research in International Business and Finance*, 75, 102718. <https://doi.org/https://doi.org/10.1016/j.ribaf.2024.102718>
- Blanco-González-Tejero, C., Cano-Marin, E., Ulrich, K., & Giralt-Escobar, S. (2024). Leveraging blockchain for industry funding: A social media analysis. *Sustainable Technology and Entrepreneurship*, 3(3), 100071. <https://doi.org/https://doi.org/10.1016/j.stae.2024.100071>
- Davies, J., Sharifi, H., Lyons, A., Forster, R., & Elsayed, O. K. S. M. (2024). Non-fungible tokens: The missing ingredient for sustainable supply chains in the metaverse age? *Transportation Research Part E: Logistics and Transportation Review*, 182, 103412. <https://doi.org/https://doi.org/10.1016/j.tre.2024.103412>
- de Andrés-Sánchez, J., Arias-Oliva, M., Souto-Romero, M., & Llorens-Marín, M. (2025). Assessing acceptance of blockchain-based loyalty programs using correlational and configurational methods and a cognitive–affective–normative framework. *Kybernetes*, 54(16), 20–48. <https://doi.org/https://doi.org/10.1108/K-11-2024-2973>
-

- Fakhfekh, M., Bejaoui, A., Bariviera, A. F., & Jeribi, A. (2024). Dependence structure between NFT, DeFi and cryptocurrencies in turbulent times: An Archimax copula approach. *The North American Journal of Economics and Finance*, 70, 102079. <https://doi.org/https://doi.org/10.1016/j.najef.2024.102079>
- Ghaemi Asl, M., Ben Jabeur, S., & Ben Zaied, Y. (2024). Analyzing the interplay between eco-friendly and Islamic digital currencies and green investments. *Technological Forecasting and Social Change*, 208, 123715. <https://doi.org/https://doi.org/10.1016/j.techfore.2024.123715>
- Ghaemi Asl, M., Ben Jabeur, S., Hosseini, S. S., & Tajmir Riahi, H. (2024). Fintech's impact on conventional and Islamic sustainable equities: Short- and long-term contributions of the digital financial ecosystem. *Global Finance Journal*, 62, 101022. <https://doi.org/https://doi.org/10.1016/j.gfj.2024.101022>
- Gupta, D., Rambhateri, & Rani, T. (2025). Examining factors influencing cryptocurrency adoption in India: Moderating role of government regulations. *Strategic Business Research*, 1(1), 100016. <https://doi.org/https://doi.org/10.1016/j.sbr.2025.100016>
- Hedhili Zaier, L., Raggad, B., & Arfaoui, M. (2025). Financial connectedness and portfolio management across market segments: a Q-VAR analysis of blockchain-digital assets, conventional assets, and clean-dirty energy stocks. *International Journal of Emerging Markets*, 21(4), 1270–1295. <https://doi.org/https://doi.org/10.1108/IJOEM-08-2024-1441>
- Jareño, F., & Yousaf, I. (2023). Artificial intelligence-based tokens: Fresh evidence of connectedness with artificial intelligence-based equities. *International Review of Financial Analysis*, 89, 102826. <https://doi.org/https://doi.org/10.1016/j.irfa.2023.102826>
- Juniati, W., & Widiastuti, T. (2024). Intention to adopt blockchain technology for zakat management in Indonesia. *Journal of Islamic Marketing*. <https://doi.org/10.1108/JIMA-12-2023-0384>
- Kayani, U., Ullah, M., Aysan, A. F., Nazir, S., & Frempong, J. (2024). Quantile connectedness among digital assets, traditional assets, and renewable energy prices during extreme economic crisis. *Technological Forecasting and Social Change*, 208, 123635. <https://doi.org/https://doi.org/10.1016/j.techfore.2024.123635>
- Khaki, A., Bakry, W., Deo, N., & Al-Mohamad, S. (2025). Re-thinking Diversification: Harnessing the Diversification Potential of AI Stocks and Cryptocurrencies using Portfolio Optimization. *International Review of Economics & Finance*, 104775. <https://doi.org/https://doi.org/10.1016/j.iref.2025.104775>
- Lamine, A. (2025). G7 investors prefer cryptocurrencies, gold or digital gold to hedge their risk? Insights from quantile time frequency connectedness. *International Review of Economics & Finance*, 104, 104646. <https://doi.org/https://doi.org/10.1016/j.iref.2025.104646>
- Mbarek, M., & Msolli, B. (2025). Assessing linkages between supply chain tokens and other assets: Evidence from a time-frequency quantile connectedness approach. *Journal of Behavioral and Experimental Finance*, 46, 101029. <https://doi.org/https://doi.org/10.1016/j.jbef.2025.101029>
- Muhammad, S., & Huang, X. (2025). Dynamic dependence and network analysis between renewable energy tokens, sustainability-driven investments and equity markets: Implications for portfolio management. *Renewable Energy*, 251, 123256. <https://doi.org/https://doi.org/10.1016/j.renene.2025.123256>
- 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, 123822. <https://doi.org/https://doi.org/10.1016/j.techfore.2024.123822>

-
- Naifar, N. (2025). Interactions between renewable energy tokens, oil shocks, and clean energy investments: Do COP26 policies matter? *Energy Policy*, 198, 114497. <https://doi.org/https://doi.org/10.1016/j.enpol.2025.114497>
- Nasir, R. M., He, F., & Yousaf, I. (2025). Relationship of green cryptocurrencies, energy tokens, centralized and decentralized exchange tokens with crypto policy uncertainty. *Research in International Business and Finance*, 75, 102743. <https://doi.org/https://doi.org/10.1016/j.ribaf.2024.102743>
- Oben, R. J., Seraj, M., & Zihni Eyüpoğlu, Ş. (2025). Assessing time-and-frequency-domain cross-market volatility contagion: a comparative study of decentralized finance assets and global traditional financial markets. *Journal of Modelling in Management*, 21(1), 419–454. <https://doi.org/https://doi.org/10.1108/JM2-07-2024-0220>
- Patel, R., Gubareva, M., & Chishti, M. Z. (2024). Assessing the connectedness between cryptocurrency environment attention index and green cryptos, energy cryptos, and green financial assets. *Research in International Business and Finance*, 70, 102339. <https://doi.org/https://doi.org/10.1016/j.ribaf.2024.102339>
- Rabbani, M. R., Hassan, M. K., Billah, S. M., Shaik, M., & Halim, Z. A. (2025). Religion vs. ethics: Tail dependence between Sukuk, green bond, Islamic Fintech, and fourth industrial revolution assets. *Pacific-Basin Finance Journal*, 90, 102683. <https://doi.org/https://doi.org/10.1016/j.pacfin.2025.102683>
- Rosele, M. I., Muneem, A., Ali, A. K., Che Seman, A., Haji Abdullah, L., Abdul Rahman, N. N., & Sukor, M. E. A. (2025). A proposed zakat model for digital assets from the Shariah perspective. *International Journal of Islamic and Middle Eastern Finance and Management*, 18(3), 489–511. <https://doi.org/https://doi.org/10.1108/IMEFM-08-2024-0408>
- Sanad, Z. (2024). Insights into financial reporting practices in the metaverse: evidence from Islamic financial institutions in Bahrain. *Journal of Islamic Marketing*, 17(2), 661–676. <https://doi.org/https://doi.org/10.1108/JIMA-01-2024-0029>
- Shahzad, U., Ghaemi Asl, M., & Tedeschi, M. (2023). Is there any market state-dependent contribution from Blockchain-enabled solutions to ESG investments? Evidence from conventional and Islamic ESG stocks. *International Review of Economics & Finance*, 86, 139–154. <https://doi.org/https://doi.org/10.1016/j.iref.2023.03.001>
- Sifat, I., Tariq, S. A., & van Donselaar, D. (2024). Suspicious trading in nonfungible tokens (NFTs). *Information & Management*, 61(1), 103898. <https://doi.org/https://doi.org/10.1016/j.im.2023.103898>
- Sindhu, M. I., Naveed, M., & Almulhim, A. A. (2025). From carbon footprints to digital footprints: Return transmission between AI and renewable energy markets. *Sustainable Futures*, 10, 101529. <https://doi.org/https://doi.org/10.1016/j.sftr.2025.101529>
- Wankmüller, C., Pulsfort, J., Kunovjanek, M., Polt, R., Craß, S., & Reiner, G. (2023). Blockchain-based tokenization and its impact on plastic bottle supply chains. *International Journal of Production Economics*, 257, 108776. <https://doi.org/https://doi.org/10.1016/j.ijpe.2023.108776>
- Xiaoyang, X., Ali, S., & Naveed, M. (2024). Artificial intelligence and big data tokens: Where cognition unites, herding patterns take flight. *Research in International Business and Finance*, 72, 102506. <https://doi.org/https://doi.org/10.1016/j.ribaf.2024.102506>
- Younis, I., Du, A. M., Gupta, H., & Shah, W. U. (2024). Dynamic spillover effects and interconnectedness of DeFi assets, commodities, and Islamic stock markets during crises. *International Review of Financial Analysis*, 96, 103563. <https://doi.org/https://doi.org/10.1016/j.irfa.2024.103563>
- Yousaf, I., Youssef, M., & Goodell, J. W. (2024). Tail connectedness between artificial intelligence tokens, artificial intelligence ETFs, and traditional asset classes. *Journal of*
-

International Financial Markets, Institutions and Money, 91, 101929.
<https://doi.org/https://doi.org/10.1016/j.intfin.2023.101929>

Zaman, A., Tlemsani, I., Matthews, R., & Mohamed Hashim, M. A. (2023). Assessing the potential of blockchain technology for Islamic crypto assets. *Competitiveness Review*, 35(2), 229–250. <https://doi.org/https://doi.org/10.1108/CR-05-2023-0100>

Zhao, X., Ghaemi Asl, M., Rashidi, M. M., Vasa, L., & Shahzad, U. (2023). Interoperability of the revolutionary blockchain architectures and Islamic and conventional technology markets: Case of Metaverse, HPB, and Bloknet. *The Quarterly Review of Economics and Finance*, 92, 112–131. <https://doi.org/https://doi.org/10.1016/j.qref.2023.09.001>

Copyright Holder :

© Dallah et al. (2026).

First Publication Right :

© Journal Islamic Economic Minangkabau

This article is under:

