

تحديات الحوكمة الشرعية لمنصات الوقف الذكية: أدلة من الإطار التنظيمي والمؤسسي في ماليزيا

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الملخص

لقد شكّل الوقف تاريخياً مؤسسة محورية لتحقيق الرعاية الاجتماعية وتعزيز العدالة بين الأجيال في المجتمعات الإسلامية، إلا أنّ هياكل حوكمته باتت تواجه تحديات متزايدة في ظل التحول الرقمي، وفي ماليزيا، تتيح المنصات الوقفية الناشئة القائمة على تقنية البلوك تشين والمنصات الذكية فرصاً لتعزيز الشفافية والكفاءة التشغيلية، لكنها تثير في الوقت ذاته إشكالات جديدة تتعلق بحوكمة الشريعة، وتتناول هذه الدراسة أثر الإطار القانوني اللامركزي والترتيبات المؤسسية في ماليزيا على حوكمة هذه المنصات المبتكرة، وقابليتها للإنفاذ، وآليات الرقابة الأخلاقية عليها.

تعتمد الدراسة منهجاً نوعياً تفسيرياً، من خلال تحليل منهجي للوثائق، شمل التشريعات الاتحادية وتشريعات الولايات، وأدوات السياسات، ومجاميع الفتاوى، والأدبيات العلمية ذات الصلة، وتُظهر النتائج أنَّ المنصات الوقفية الرقمية تُعد في الغالب أدوات إدارية، في حين تظل السلطة القانونية والرقابة الشرعية متمركزة مؤسسياً لدى مجالس الشؤون الإسلامية في الولايات والمحاكم الشرعية، كما تكشف الأتمتة عبر العقود الذكية عن إشكالات غير محسومة تتعلق بالمساءلة، والسلطة التقديرية، وتحديد المسؤولية القانونية، وهو ما يتفاقم بسبب التباين التشريعي بين الولايات، وتخلص الدراسة إلى أن استدامة مبادرات الوقف الذكي تعتمد أساساً على مواءمة الأطر المؤسسية، وتوحيد معايير الحوكمة، وتطوير آليات رقابة شرعية مرنة، أكثر من اعتمادها على التقدم التقني وحده.

الكلمات المفتاحية: حوكمة الشريعة، الوقف الذكي، البلوك تشين، التمويل الاجتماعي الإسلامي؛ ماليزيا

Shari'ah Governance Challenges of Smart Waqf Platforms: Evidence from Malaysia's Regulatory and Institutional Framework

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Abstract

Waqf has historically functioned as a key institution for social welfare and intergenerational equity in Muslim societies. However, its governance structures are increasingly challenged by digital transformation. In Malaysia, emerging blockchain-based and smart waqf platforms offer opportunities to enhance transparency and operational efficiency but also introduce new Shari'ah governance concerns. This study examines how Malaysia's decentralised legal framework and institutional arrangements influence the governance, enforceability, and ethical oversight of innovative waqf platforms. Using a qualitative interpretivist approach, the research conducts systematic document analysis of federal and state legislation, policy instruments, fatwa compilations, and academic literature. The findings indicate that digital waqf platforms are generally viewed as administrative tools, while legal authority and Shari'ah oversight remain institutionally anchored within State Islamic Religious Councils and Syariah courts. Smart contract automation introduces unresolved issues related to accountability, discretion, and liability,

further complicated by legislative fragmentation across states. The study concludes that the sustainability of smart waqf initiatives depends primarily on institutional alignment, harmonised governance standards, and adaptive Shari'ah oversight mechanisms rather than technological advancement alone.

Keywords: Shari'ah Governance; Smart Waqf; Blockchain; Islamic Social Finance; Malaysia.

1. Introduction

Historically, waqf has served as one of the most significant institutional mechanisms for social welfare, intergenerational equity, and the provision of public goods in Muslim societies. Classical waqf institutions financed essential social infrastructure including mosques, schools, hospitals, water systems, and charitable services thereby strengthening community welfare while reducing reliance on state fiscal resources. In contemporary Islamic social finance discourse, waqf continues to attract scholarly and policy attention because of its potential to address modern development challenges and contribute to sustainable socio-economic development.

In Malaysia, however, the governance of waqf operates within a distinctive constitutional and institutional framework shaped by the country's decentralised federal system. Under the Ninth Schedule (State List) of the Federal Constitution, matters relating to Islam fall under the jurisdiction of individual states. Consequently, waqf administration is primarily managed by State Islamic Religious Councils (SIRCs), while federal institutions such as the Department of Waqf, Zakat and Hajj (JAWHAR) provide coordination, policy guidance, and developmental support (Mahomed et al., 2023). Although this decentralised structure preserves state autonomy in religious governance, it simultaneously introduces structural complexities that influence the regulation, standardisation, and scalability of waqf administration across jurisdictions. Despite ongoing reform initiatives, Malaysian waqf institutions continue to face persistent governance challenges. Previous studies consistently identify fragmented regulatory frameworks, uneven enforcement capacities across states, transparency limitations in waqf administration, and limited scalability of waqf initiatives across jurisdictional boundaries (Hassan et al., 2019; Pitchay et al., 2020; Ayub, Khan & Ismail, 2024; Ismail et al., 2025). These challenges largely stem from institutional diversity embedded within Malaysia's federal legal system, where individual states maintain distinct legislative provisions and administrative procedures governing waqf institutions.

In response, Malaysia has introduced several institutional and technological

reforms aimed at strengthening waqf governance and improving regulatory coordination. A notable development is the Waqf Development Blueprint (2023–2025) introduced by JAWHAR, which proposes initiatives such as digital waqf registries, standardised reporting frameworks, and enhanced federal coordination through the National Waqf Council. The blueprint also encourages experimentation with digital technologies, including blockchain-based waqf crowdfunding platforms, digital asset tracking mechanisms, and the adoption of cybersecurity and personal data protection standards for online fundraising.

At the state level, certain jurisdictions particularly Selangor and Negeri Sembilan, have introduced amendments to their waqf enactments to clarify the rights and responsibilities of mutawalli (trustees) within digital environments and to facilitate the integration of innovative waqf platforms into existing legal frameworks (Arif, 2023; Manaf et al., 2025). These developments indicate a growing institutional recognition that waqf governance must adapt to technological transformation within the digital economy.

Nevertheless, Malaysia's waqf regulatory framework remains highly fragmented. Approximately seventeen separate waqf enactments exist across Malaysian states, each containing varying provisions governing the establishment, administration, and trusteeship of waqf assets. Only a limited number of states—such as Selangor (Government of Selangor, 2015), Terengganu (2016), Negeri Sembilan, and Penang—maintain dedicated waqf enactments that comprehensively regulate mutawalli responsibilities and governance procedures. In many other jurisdictions, waqf provisions are incorporated within broader Islamic administration laws that emphasise procedural registration rather than substantive governance mechanisms (JAWHAR, 2021; Agustina et al., 2025; National Land Code (Act 56 of 1965), rev. ed.).

Significant differences also exist in trusteeship arrangements across states. In most jurisdictions, waqf property is vested exclusively in SIRC as the

sole corporators responsible for waqf administration. However, some states permit alternative mutawalli arrangements involving corporate trustees or institutional administrators. These regulatory differences are further complicated by uneven recognition of digital waqf provisions across states. While Selangor and Negeri Sembilan have begun incorporating digital governance clauses within their waqf legislation, similar provisions remain absent in other jurisdictions such as Sabah and Sarawak. Such disparities restrict the interoperability and scalability of digital waqf platforms across Malaysia (JAWHAR, 2021; Agustina et al., 2025; National Land Code (Act 56 of 1965), rev. ed.).

These structural differences create new Shari'ah governance challenges, particularly with the emergence of blockchain-based waqf initiatives. Contemporary digital waqf platforms increasingly employ distributed ledger technologies that enable trust-less transactions, automated execution through smart contracts, and tokenisation of waqf assets. However, existing waqf enactments remain largely silent on several key issues associated with these technologies, including the irreversibility of blockchain records, oracle risks arising from inaccurate data inputs, programmable discretion embedded in automated contracts, and the evidentiary status of digital audit trails. Furthermore, enforcement mechanisms, dispute resolution processes, and jurisdictional authority between Syariah courts and civil courts vary significantly across states, creating legal uncertainties regarding accountability and compliance (Lahsasna & Hassan, 2021; Ascarya & Sukmana, 2023; Jafar et al., 2025).

Practical legal constraints further complicate the implementation of blockchain-based waqf platforms. Under Malaysian waqf law, land or revenue authorities cannot unilaterally declare property as waqf. Instead, the establishment of waqf requires a formal declaration by the waqif through a deed or testament, followed by validation and registration by the relevant SIRC or Syariah court. For example, the Selangor Waqf Enactment 2015 requires explicit documentation

confirming the waqf declaration before registration procedures can proceed. Revenue authorities are therefore limited to recording title transfers under the National Land Code and cannot independently recognise waqf ownership (National Land Code (Act 56 of 1965), rev. ed.). In digital contexts, this legal structure creates additional challenges because blockchain-based tokens cannot automatically update land records or independently establish legal recognition. Consequently, most digital waqf initiatives continue to rely on SIRC approvals, fatwa rulings, and manual verification procedures rather than automated legal recognition mechanisms (Ghazali, 2022; Manaf, Siong & Razak, 2025).

Beyond waqf-specific developments, Malaysia has established one of the most advanced regulatory environments for Islamic finance and fintech globally. Institutions such as Bank Negara Malaysia and the Securities Commission Malaysia have introduced comprehensive frameworks addressing Shari'ah governance, fintech regulatory sandboxes, and digital asset regulations. These frameworks emphasise board-level accountability, the authority of Shari'ah committees, auditability in accordance with AAOIFI standards, and robust risk management practices (Yin, 2018; Rofiq et al., 2023). However, these regulatory frameworks were primarily designed for commercial Islamic financial institutions rather than charitable entities such as waqf. Their application to digital waqf platforms therefore raises important concerns regarding compliance complexity, fiduciary accountability, and the possibility that technological systems may undermine the ethical and charitable objectives of waqf administration (Kunhibava, 2023; Ilyas, 2025).

Against this background, the emergence of innovative waqf platforms introduces critical governance questions concerning accountability, discretion, and ethical oversight in automated charitable systems. While blockchain technologies offer potential benefits in terms of transparency, traceability, and operational efficiency, technological solutions alone cannot resolve the deeper institutional fragmentation embedded within Malaysia's waqf governance framework.

Accordingly, this study examines the Shari'ah governance challenges associated with innovative waqf platforms within Malaysia's evolving regulatory and institutional landscape. By analysing recent legal reforms, state-level waqf enactments, and emerging Islamic fintech scholarship, the study moves beyond technological optimism to critically explore how automation may reshape accountability, discretion in contract enforcement, and ethical supervision in waqf administration. Ultimately, the sustainability of digital waqf initiatives will depend not merely on technological sophistication but on the capacity of Shari'ah governance frameworks to adapt, harmonise, and provide effective oversight within a fragmented legal environment.

1.1. Research Questions

1. How do regulatory and waqf institutions in Malaysia perceive and interpret the governance and enforceability of blockchain-based innovative waqf platforms?
2. How are Shari'ah governance challenges associated with smart-contract-based waqf administration experienced and addressed within Malaysia's institutional context?

1.3. Research Objectives

1. To examine how regulatory authorities and waqf institutions in Malaysia perceive and interpret the governance framework and enforceability of blockchain-based innovative waqf platforms.
2. To analyse the Shari'ah governance challenges associated with smart-contract-based waqf administration and how these challenges are addressed within Malaysia's institutional and regulatory context.

1.3. Structure of the Paper

The remainder of this paper is organised as follows. The next section presents the research methodology, outlining the qualitative interpretivist approach adopted in this study, the documentary data sources, and the procedures for thematic analysis. This is followed by the literature review, which examines

the theoretical foundations of waqf governance, Malaysia's decentralised regulatory framework, and the emerging discourse on digital and blockchain-based waqf platforms. The subsequent section presents the data analysis and thematic interpretation, highlighting key governance challenges related to jurisdictional authority, legal enforceability, Shari'ah oversight, digital automation, and institutional fragmentation. The paper then discusses the main findings and their implications for Shari'ah governance and regulatory adaptation in the context of smart waqf platforms. Finally, the paper concludes with a summary of the study's contributions and a set of policy and governance recommendations to strengthen the institutional sustainability of digital waqf initiatives in Malaysia.

2. Research Methodology

This study adopts a qualitative interpretivist methodology to examine the Shari'ah governance challenges associated with blockchain-based waqf platforms in Malaysia. The interpretivist paradigm is appropriate because waqf governance is inherently normative and institutional, shaped by legal authority, religious interpretation, and ethical accountability rather than purely technical efficiency. When emerging digital technologies intersect with decentralised religious governance structures, issues of authority, discretion, and enforceability become interpretive rather than empirically measurable phenomena (Creswell & Poth, 2018; Lahsasna & Hassan, 2021).

The research employs a qualitative institutional approach centred on document analysis. In governance studies, legal texts, policy instruments, and regulatory frameworks function as primary mechanisms that define institutional authority, oversight structures, and accountability mechanisms (Bowen, 2009). Accordingly, the primary data sources include Malaysian state Waqf Enactments, Islamic Law Administration Enactments, the National Land Code 1965, federal and state waqf policy documents particularly those issued by the Department of Waqf, Zakat and Hajj (JAWHAR) and relevant Shari'ah governance instruments. These materials are complemented by

publicly available institutional disclosures related to digital waqf initiatives and Islamic fintech developments.

Document selection follows a purposive, criterion-based strategy focusing on jurisdictions where legal reform or digital waqf experimentation has been documented, particularly Selangor and Negeri Sembilan. These jurisdictions provide analytically relevant cases due to their relatively developed legal frameworks and institutional engagement with digital governance. Data are analysed through iterative thematic interpretation guided by institutional governance theory and Shari'ah ethical principles, focusing on the distribution of authority, mechanisms of accountability, and the implications of automation for Shari'ah supervision.

Methodological rigour is ensured through qualitative trustworthiness standards, including credibility, dependability, confirmability, and contextual transparency (Lincoln & Guba, 1985). The study relies exclusively on publicly available documents and involves no human participants, ensuring adherence to ethical research practices.

2.1. Data Sources for Document Analysis

Documentary data underwent iterative thematic analysis guided by the coding framework in Table 1, adhering to Braun and Clarke's (2006) principles for identifying meaning patterns through systematic textual engagement. The process unfolded in three phases: data familiarisation, manual initial code generation, and iterative theme refinement. Manual coding—eschewing software—was apt for this bounded corpus of authoritative legal-policy documents (statutory enactments, frameworks, Shari'ah instruments), necessitating nuanced interpretive reading of statutory language, institutional mandates, and normative implications over automated indexing suited to voluminous interview data.

Codes emerged from systematic document review, targeting analytical categories: jurisdictional authority, legal enforceability, Shari'ah governance, digital administration, and accountability. Organised into matrices, codes

facilitated cross-jurisdictional comparison, consolidating into themes capturing blockchain-waqf governance dynamics in Malaysia. Validity was bolstered via triangulation across constitutional provisions, legislation, federal policies, Shari'ah instruments, and peer-reviewed literature, ensuring themes reflected institutional patterns rather than isolated excerpts. Iterative refinement incorporated emergent insights from ongoing analysis.

As a purely documentary study, inter-coder reliability testing was obviated; rigour instead derived from transparent procedures, step-wise documentation, and primary-source verification, aligning with qualitative benchmarks for credibility through interpretive depth, triangulation, and transparency (Bowen, 2009; Lincoln & Guba, 1985). This approach yields context-sensitive insights into Malaysia's decentralised legal-Shari'ah-digital interplay shaping innovative waqf platforms. As the study relies exclusively on documentary analysis rather than interview or survey data, formal inter-coder reliability testing was not required.

Nevertheless, methodological rigor was maintained through a transparent coding procedure, systematic documentation of analytical steps, and continuous verification of interpretations against primary document analysis. This approach aligns with established qualitative standards for document-based research, where credibility is achieved through careful textual interpretation, source triangulation, and analytical transparency (Bowen, 2009; Lincoln & Guba, 1985). Through this structured manual analysis, the study provides a context-sensitive interpretation of how Malaysia's decentralised legal framework, Shari'ah governance institutions, and emerging digital technologies interact to shape the governance of innovative waqf platforms.

Table 1. Summary of Methodology

Category	Document Type	Issuing Authority	Examples of Documents Analysed	Purpose in Analysis	Credibility & Authority
Constitutional & Federal Law	Constitutional provisions	Government of Malaysia	Federal Constitution (Ninth Schedule – State List)	Establish jurisdictional authority over waqf and the limits of federal harmonisation	Supreme legal authority
Federal Land Law	Statutory land legislation	Parliament of Malaysia	National Land Code (Act 56 of 1965, Revised Edition)	Assess legal recognition of waqf declaration, registration, and non-recognition of blockchain records	Binding statutory law
State Waqf Legislation	Waqf enactments	State Governments / SIRC's	Selangor Waqf Enactment 2015; Negeri Sembilan Waqf Enactment 2015; Terengganu Waqf Enactment 2016; Penang Waqf Enactment 2017	Examine mutawalli authority, enforcement mechanisms, and digital recognition	Gazetted state law
Islamic Administration Law	Administration enactments	State Governments	Administration of Islamic Law Enactments (selected states)	Identify the procedural treatment of waqf in non-specialised states	Gazetted state law
Federal Policy Documents	Policy & strategy papers	JAWHAR	Waqf Development Blueprint 2023–2025; National Waqf Policy documents	Analyse federal coordination, digital reform direction, and governance intent	Official government policy
Shari'ah Normative Instruments	Fatwa compilations	State Fatwa Committees / JAWHAR	JAWHAR Collection of Fatwa on Waqf (2021)	Determine Shari'ah positions on trusteeship, declaration authority, and digital waqf	Authoritative religious rulings
Institutional Governance Frameworks	Shari'ah governance & fintech guidelines	BNM / Securities Commission	Shari'ah Governance Policy Document; Fintech & Digital Asset Guidelines	Comparative governance benchmark and institutional mismatch analysis	Statutory regulator guidance
Academic Literature	Peer-reviewed journals & monographs	Academic publishers	Hassan et al. (2019); Pitchay et al. (2020); Lahsasna & Hassan (2021); Ascarya & Sukmana (2023)	Conceptual framing and critical triangulation	Peer-reviewed, indexed

3. Literature Review:

3.1. Shari'ah Governance Challenges of Smart Waqf Platforms

3.1.1. Waqf as an Institution of Governance: Classical Principles and Modern Transformation

Waqf, foundational to Islamic social finance, constitutes an irrevocable (*luzūm*), perpetual (*taʿbīd*), and inalienable (*taḥbīs al-aṣl*) dedication of property for charitable perpetuity, administered via fiduciary trusteeship (*wilāyah al-waqf*) by Shari'ah-bound mutawallis under religious-judicial oversight (Abbasi, 2012). This governance triad—legal authority, moral accountability, and institutional supervision—enshrines public benefit within waqf institutions. Modern Muslim-majority states have transitioned waqf from community custodianship to state-centric bureaucratic models, strengthening legal recognition and asset safeguards (Hassan et al., 2019). However, bureaucratisation curtails discretionary flexibility essential for social adaptation, straining the equilibrium between regulatory formalism and waqf's ethical imperatives (Supiyana, 2023).

These evolutions reveal profound structural fissures amid digital disruption. Conventional regulations presuppose human discretion within hierarchical authority, yet blockchain platforms and smart contracts deploy automated, decentralised execution. This technology-law dissonance challenges waqf governance's viability in algorithmic environments.

This study intervenes in these debates, transcending descriptive waqf administration to probe institutional governance–technology interfaces. It addresses the pivotal “so what” question: how to architect forward-looking digital waqf frameworks that harmonise Shari'ah perpetuity with programmable infrastructures, ensuring adaptive, compliant innovation.

3.1.2. Malaysian Waqf Governance and Regulatory Fragmentation

Malaysia's waqf governance embodies constitutional decentralization, as the Ninth Schedule's State List assigns Islamic matters—including waqf—

to individual state jurisdictions. Consequently, State Islamic Religious Councils (SIRCs) hold exclusive trusteeship over waqf assets, while federal entities like JAWHAR fulfill coordinating and advisory functions without enforceable authority. This arrangement has engendered a pluralistic legal landscape, characterized by diverse state enactments that diverge significantly in regulatory scope, enforcement mechanisms, and administrative granularity. While this model enhances grassroots accountability and Shari'ah legitimacy through localized oversight, it precipitates structural fragmentation, undermining policy coordination and regulatory homogeneity across states. Notably, only a handful of states—Selangor (Enactment 1999, amended 2015), Negeri Sembilan, Terengganu, Penang, and Melaka—have promulgated comprehensive waqf-specific laws that delineate creation processes, administration protocols, and mutawalli fiduciary duties with precision. In contrast, many others integrate waqf provisions into expansive Islamic administration enactments, emphasizing procedural registration over substantive governance frameworks.

This regulatory asymmetry not only compromises institutional coherence, transparency, and capacity but also erodes public trust in waqf institutions, as evidenced by prior analyses. Fragmentation intensifies technology-law tensions for emerging digital waqf platforms, particularly blockchain systems designed for interoperability and distributed verification, which clash with Malaysia's territorial trusteeship paradigm.

This study advances the literature threefold: first, by reconceptualizing fragmentation as a structural precondition for digital waqf innovation rather than a mere administrative hurdle; second, by elucidating mismatches between decentralized technologies and state-centric governance; and third, by applying an institutional analytical lens to unpack the interplay of legal authority, technological disruption, and Shari'ah principles within Islamic social finance.

3.2. Digitalisation and the Emergence of Smart Waqf Platforms

Waqf institutions face governance inefficiencies, low transparency, and limited technology adoption in many countries. Digitalisation has been posited as a

remedy to these challenges and as a means to reinvigorate waqf governance. More and more the literature on Islamic social finance depicts fintech, blockchain, and digital platforms as capabilities for solving inefficiencies in waqf administration especially regarding cash waqf mobilisation, crowdfunding, and donor transparency (Mohsin et al., 2022). Blockchain as waqf platform is typically related to better traceability, immutable records as well as automated distribution can reduce agency problems and governance opacity (Ilyas, 2025).

Interestingly, Malaysia has taken active measures towards digital reform of the waqf sector. Initiatives such as digital waqf registries, standardised reporting templates, and coordination through the National Waqf Council (JAWHAR's Waqf Development Blueprint 2023–2025). These reforms are intentionally permissive of the exploration of digital platforms while enforcing adherence to cybersecurity and data protection principles. Even at the state level, jurisdictions including Selangor and Negeri Sembilan have started to introduce provisions which acknowledge digital administration and specify the obligations of mutawallis in online spaces (Arif, 2023).

The literature, however, increasingly warns against techno-optimism. As Ascarya and Sukmana (2023) stated, although digital tools are capable of improving operational performance, it does not instantaneously overcome the more profound governance and Shari'ah oversight challenges. Within the framework of an endowment, where purposes are often charitable and fiduciary rather than commercial in nature, transplanting fintech logic can lead to misalignment between technological development and Shari'ah governance principles.

3.3. Shari'ah Governance Beyond Compliance: Authority, Discretion, and Ethics

Shari'ah governance literature has developed extensively within Islamic banking and finance, emphasising institutional mechanisms such as Shari'ah committees, internal Shari'ah audit, and board accountability. These

frameworks prioritise *ex ante* approval, continuous monitoring, and formalised risk management. While effective in commercial finance, their suitability for waqf governance remains contested (Lahsasna & Hassan, 2021).

Waqf governance is inherently normative and ethical. It requires interpretive judgment, contextual discretion, and responsiveness to beneficiary welfare. Scholars argue that Shari'ah governance in Islamic social finance cannot be reduced to technical compliance or auditability alone, as it encompasses moral reasoning, public interest (*maṣlaḥah*), and adaptive interpretation (Ayub et al., 2025). Smart waqf platforms challenge this paradigm by introducing automated execution through smart contracts, potentially shifting Shari'ah oversight from discretionary supervision to pre-coded logic (Harunoğullari, 2025).

Existing Malaysian waqf enactments are largely silent on issues central to blockchain governance, including irrevocability in code, oracle dependency, error correction, and the evidentiary status of digital audit trails. This silence creates uncertainty regarding how Shari'ah accountability can be exercised when decision-making is partially embedded in automated systems (Ascarya & Sukmana, 2023).

3.4. Legal Enforceability and Institutional Constraints in Digital Settings

Legal enforceability constitutes a critical fault line in the literature on smart waqf platforms. Malaysian waqf law requires an explicit declaration by the waqif, validated by SIRC's or Syariah courts, for a waqf to be legally recognised. Revenue or land authorities possess no unilateral declaratory authority, and blockchain-based tokens cannot alter land records under the National Land Code 1965 (Ghazali, 2022). As a result, digital waqf platforms operate within a dual system where technological records lack automatic legal effect (Wibowo, 2025). This institutional arrangement reinforces Shari'ah authority but exposes significant gaps in enforcement. Scholars note that while blockchain systems are borderless and immutable by design, waqf legality remains territorially

bounded and dependent on state-level recognition. The absence of harmonised legal standards undermines the scalability and interoperability of smart waqf platforms across Malaysian states (JAWHAR, 2021; Setiyowati et al., 2025).

3.5. Automation, Accountability, and the Transformation of Trusteeship

A recurring theme in the literature concerns the transformation of accountability under automation. Classical waqf governance presumes human trusteeship, ethical reasoning, and corrective discretion. Smart contracts, by contrast, prioritise certainty and predetermined execution. This raises unresolved questions about how Shari'ah principles such as flexibility, error rectification, and beneficiary-centric decision-making can be operationalised within rigid, code-based systems (Lahsasna & Hassan, 2021). Moreover, responsibility for Shari'ah non-compliance becomes diffuse in automated environments. It is unclear whether liability rests with platform developers, mutawallis, Shari'ah committees, or supervising institutions when automated processes produce unintended outcomes. The literature thus highlights a governance gap in attributing authority and responsibility within smart waqf ecosystems (Altaf, 2025; Azizli et al., 2025).

3.6. Synthesis and Identified Research Gap

Existing scholarship provides valuable insights into waqf governance, Islamic social finance, and the growing role of digital technologies in philanthropic management. A significant body of literature has examined institutional and legal challenges affecting waqf administration, particularly fragmented governance structures, transparency limitations, and inefficiencies in asset utilisation (Çizakça, 2011; Kuran, 2016; Rashid, 2018). At the same time, studies on Islamic social finance highlight the developmental potential of waqf in supporting poverty alleviation, education, and community welfare, particularly when integrated with other Islamic philanthropic instruments such as zakat and sadaqah (Ismail Abdel Mohsin, 2013; Hassan & Muneeza, 2022). Recent developments in financial technology have further expanded scholarly

attention toward the digitalisation of Islamic philanthropic institutions. Blockchain and distributed ledger technologies are increasingly recognised for their potential to enhance transparency, traceability, and donor confidence in waqf management (Hassan, Rabbani, & Aliyu, 2020; Muneeza & Mustapha, 2021). Digital waqf platforms are also viewed as mechanisms capable of improving fundraising efficiency and encouraging broader public participation in charitable activities (Ascarya, Rahmawati, & Sukmana, 2022).

Despite these advances, existing research remains fragmented across studies on waqf governance, Islamic social finance, and fintech innovation. Moreover, Shari'ah governance frameworks have largely evolved within commercial Islamic finance contexts (Archer & Karim, 2007; Hasan, 2010). In Malaysia, limited research examines how the country's decentralised waqf governance structure interacts with emerging digital waqf platforms (Hassan & Shahid, 2010; Pitchay, Mydin Meera, & Saleem, 2015). This study addresses this gap by examining the governance implications of digital waqf systems within Malaysia's institutional framework.

4. Data Analysis and Thematic Interpretation

The documentary data were analysed through an iterative thematic process guided by the coding framework presented in Table 2. Rather than merely describing institutional provisions, the analysis critically examines how Malaysia's decentralised legal framework, Shari'ah governance institutions, and emerging digital technologies interact to shape the governance viability of innovative waqf platforms. This interpretive approach enables the study to move beyond descriptive institutional mapping toward a critical assessment of the compatibility of programmable technologies with waqf regulatory structures. The findings are organised around seven interrelated themes that collectively illuminate structural tensions between technological innovation and institutional governance.

4.1. Jurisdictional Authority: Constitutional Decentralisation and Institutional Dominance

Jurisdictional authority emerges as a key structural constraint shaping the governance of smart waqf platforms in Malaysia. Under the Ninth Schedule of the Federal Constitution, Islamic matters—including waqf—fall under state jurisdiction, resulting in a decentralised governance framework where State Islamic Religious Councils (SIRCs) act as the sole trustees and corporators of waqf assets. While federal bodies such as the Department of Waqf, Zakat and Hajj (JAWHAR) provide coordination and advisory support, they lack legislative authority to harmonise governance practices across states (JAWHAR, 2021; Hassan et al., 2019).

From an institutional governance perspective, this decentralised arrangement strengthens the legal legitimacy and Shari'ah compliance of waqf administration. However, it simultaneously concentrates decision-making authority within state-level institutions, limiting regulatory harmonisation and cross-jurisdictional coordination (Pitchay et al., 2020; Arif, 2023). These structural dynamics create significant challenges for digital waqf initiatives intended to operate across multiple jurisdictions.

Digital waqf platforms designed to facilitate nationwide fundraising or asset management must comply with distinct legal frameworks and supervisory authorities in each state. As a result, operational uncertainty increases and scalability across jurisdictions becomes restricted. This institutional fragmentation directly affects the feasibility of smart waqf platforms that rely on consistent governance standards.

More broadly, the findings highlight a fundamental tension between hierarchical legal governance and the decentralised architecture of blockchain technologies. While waqf administration is embedded in territorially defined institutional hierarchies, blockchain infrastructures operate through distributed validation and cross-jurisdictional interoperability (De Filippi & Wright, 2018; Werbach, 2018). Consequently, successful adoption of smart waqf platforms requires institutional and regulatory adaptation beyond technological innovation alone.

4.2. Legal Recognition and Enforceability: Structural Limits of Digital Waqf

The thematic analysis indicates that legal recognition and enforceability constitute major structural barriers to the advancement of blockchain-based waqf initiatives in Malaysia. The legal framework governing waqf imposes strict formal requirements for establishing a valid endowment, including an explicit declaration by the waqif and formal endorsement by the relevant State Islamic Religious Council (SIRC) or recognition by a Syariah court. This institutional arrangement reflects the traditional governance model of waqf, where religious and legal authorities play a central role in validating endowment creation and administration (Abbasi, 2012; Hassan et al., 2019). Within this regulatory structure, digital platforms possess no independent declaratory authority. Consequently, blockchain-based systems cannot unilaterally establish legally recognised waqf arrangements without institutional validation. Similar observations appear in studies examining the interaction between Islamic legal frameworks and emerging financial technologies, which emphasise that technological infrastructures cannot replace legally recognised governance mechanisms (Muneeza & Mustapha, 2021).

For example, digital waqf crowdfunding platforms may record donations and track asset utilisation through blockchain systems, improving transparency and traceability. However, the waqf status of these assets remains contingent upon formal recognition by the relevant SIRC. Without such validation, blockchain records function merely as technological registries rather than legally binding declarations.

Furthermore, land administration laws impose additional constraints. Blockchain records or tokenised waqf assets have no legal standing under the National Land Code for land registration. Accordingly, any designation of land as waqf must follow conventional state registration procedures. These findings suggest that technological innovation alone cannot transform waqf governance without corresponding legal and institutional adaptation.

4.3. Shari'ah Governance Structures: Authority, Oversight, and Accountability

The thematic analysis shows that Shari'ah governance in Malaysian waqf institutions remains primarily institutionally embedded rather than technologically mediated. Authority over waqf administration is exercised through statutory appointment and institutional delegation, with supervision undertaken by State Islamic Religious Councils (SIRCs) and state-level fatwa committees in accordance with waqf enactments (Hassan et al., 2019; Arif, 2023). This arrangement reflects the classical governance model of waqf, where fiduciary responsibility and ethical accountability are anchored in recognised religious authorities and formal legal frameworks (Abbasi, 2012). Within this framework, Shari'ah governance operates through both ex-ante approval and ex-post monitoring mechanisms. These include reporting requirements, financial audits, and supervisory oversight conducted by SIRCs and related institutions. Such processes ensure that mutawalli decisions remain aligned with Shari'ah principles and the objectives of waqf endowment (maṣlaḥah) (Kahf, 2003). Consequently, human judgment, interpretive authority, and supervisory discretion remain central components of waqf governance.

For instance, waqf asset development projects typically require formal approval from the relevant SIRC and consultation with fatwa committees to confirm Shari'ah compliance before implementation. This multi-layered review structure prioritises institutional accountability over automated execution.

However, this governance approach contrasts with blockchain-based smart contracts that execute transactions automatically through pre-programmed conditions. Such automation may limit opportunities for institutional intervention and interpretive discretion (De Filippi & Wright, 2018; Werbach, 2018). This divergence highlights the need for adaptive Shari'ah governance frameworks capable of overseeing digital waqf platforms while preserving accountability and ethical oversight.

4.4. Digitalisation and Automation: Efficiency Without Legal Autonomy

Initiatives for digitalisation are suggested at the administrative level (e.g., states such as Selangor and Negeri Sembilan) policy documents indicate. Technology-based solutions such as digital registries, online fundraising portals and integrated databases are being slowly adopted to ensure enhanced transparency and operational efficiency.

But the analysis indicates that this acknowledgment is still more administrative than legal. Digital records are best understood as secondary instruments of governance, rather than unquestionable evidence in a court of law. The introduction of smart contracts further complicates this governance issue. Smart contracts automate the execution of institutionalized processes, thereby fragmenting the classic authority-process relationship by lessening discretionary input from humans.

This has a specific fear alluded to in this analysis of Oracle interdependencies where sanitized data from the outside interacts with automated output. This could very well lead to several technological revolutions, and this brings about a fundamental question, more so with respect to attribution of Shari'ah responsibility in situations where decision making that leads to hampering situations because automation carries out decision making. The implication of these findings is that it is legitimate to say such that if there exists an institutional environment which respects Shari'ah then a technocratically efficient governance does not exist.

4.5. Institutional Fragmentation: Uneven Legislative and Enforcement Capacity

Document analysis reveals institutional fragmentation as a dominant structural feature shaping waqf governance in Malaysia. Because waqf administration falls under state jurisdiction, legislative provisions vary significantly across states. While some jurisdictions—particularly Selangor and Negeri Sembilan—have introduced relatively comprehensive waqf enactments

addressing asset management, mutawalli responsibilities, and institutional oversight, other states regulate waqf through broader Islamic administration laws where provisions are limited mainly to procedural registration matters (Pitchay et al., 2020). This uneven legislative landscape produces varying levels of regulatory clarity and governance capacity across jurisdictions.

The analysis further indicates substantial variation in enforcement mechanisms among states. Differences exist in supervisory authority, dispute resolution processes, and sanction frameworks for regulatory non-compliance. Previous studies similarly identify fragmented regulatory arrangements as a persistent challenge within Malaysia's waqf governance environment, often weakening institutional coordination and limiting the development of consistent governance practices across waqf institutions (Hassan et al., 2019). As a result, regulatory diversity may lead to overlapping oversight responsibilities and policy incoherence among state authorities.

These structural variations present significant challenges for the development of digital waqf platforms operating across multiple jurisdictions. Since each state maintains distinct legislative and administrative requirements, national-level digital platforms for fundraising or asset tracking must comply with multiple regulatory regimes simultaneously. This complexity not only increases operational constraints but also limits the interoperability of technology-based waqf systems that depend on uniform governance standards.

Analytically, this fragmentation extends beyond administrative diversity and generates broader uncertainties concerning jurisdictional authority, regulatory accountability, and governance oversight in technology-mediated waqf management. While blockchain infrastructures are inherently designed for standardisation and cross-jurisdictional interoperability, Malaysia's decentralised governance framework remains territorially segmented. Consequently, institutional fragmentation significantly influences both the operational feasibility and long-term governance sustainability of smart waqf platforms.

4.6. Ethical and Normative Concerns: Maṣlaḥah, Discretion, and Flexibility

Besides the legal and institutional venues, the analysis reveals significant ethical and normative tensions raised from waqf governance automation. The administration of waqf in more classical times can ultimately be determined by the concept of maṣlaḥah (public interest): an informal principle that required contextual judgment, adaptive discretion and moral responsibility to protect the welfare of beneficiaries (Abbasi, 2012; Kahf, 2003). However, mutawallis should go beyond simply running waqf property well within the boundaries of procedural law since in many cases adherence to rules could be detrimental to the endowment's higher moral and charitable goals.

This ethical foundation may be challenged with increasing reliance on automated systems, especially smart contracts, as suggested by this thematic analysis. Mechanisms like execution code thus work on a set of rational rules and do not allow much human or interventional engagement, such as manipulation, exception handling, or modification [9]. Similar concerns have emerged in the literature at large, addressing questions of automated decision-making systems within the realm of algorithmic governance that prioritise procedural efficiency over contextual justice (De Filippi & Wright, 2018; Werbach, 2018).

From the analysis of this document an example can be given, and that is: automated distribution mechanism in digital waqf platforms. For example, if a smart contract is programmed to distribute waqf proceeds based on static conditions such as fixed beneficiary allocations or predetermined time schedules, it will continue executing those instructions even when unforeseen circumstances arise, like changes in buffer needs or data input errors. In traditional waqf governance systems, mutawallis or supervisory authorities would have discretion and adjust distributions to better serve public interest. Conversely, automated systems that are rigid may not have the flexibility necessary to respond to these ethical concerns.

This theme thus points to a more general governance problem: moral

judgment is delegated to the technological system and receives insufficient oversight. From the perspective of the questions guiding this study, this realization emphasizes the necessity to assess not only operational efficiency in digital waqf platforms but also their conceptual harmony with Shari'ah governance principles. If technological innovation is to remain consistent with the fundamental aims of waqf institutions, it will be critical that the digital infrastructures upon which society will depend uphold the values of oversight, discretion and public interest.

4.7. Governance Gaps and Tensions: Technology–Law Mismatch and Liability Ambiguity

The third theme synthesises the governance tensions identified throughout the thematic analysis, highlighting structural misalignments between the operational logic of blockchain technologies and the institutional foundations of waqf governance. Blockchain systems are characterised by immutability, automated execution, and distributed verification mechanisms. These features, while technologically advantageous, conflict with existing waqf governance frameworks that rely on revocability, judicial discretion, and institutionally defined authority structures (De Filippi & Wright, 2018; Werbach, 2018). This divergence creates a fundamental mismatch between technological design and legal governance, requiring smart waqf platforms to operate within institutional systems that were not originally designed for automated decision-making.

For instance, smart contracts deployed on blockchain networks can autonomously execute financial transactions or distribute waqf assets once predetermined conditions are satisfied. However, if errors occur—such as incorrect beneficiary allocation or inaccurate data from external oracle sources—existing waqf governance frameworks may lack adequate mechanisms for intervention or correction. This rigidity contrasts sharply with traditional waqf administration, where mutawallis and supervisory institutions exercise discretionary judgment to ensure that waqf management aligns with Shari'ah objectives and beneficiary welfare.

Another critical challenge concerns the attribution of responsibility in automated environments. Current legal and institutional documents rarely specify how liability should be distributed among platform developers, mutawallis, Shari'ah advisory bodies, or regulatory authorities in cases of operational failure or Shari'ah non-compliance. Similar concerns have been identified in broader blockchain governance debates, where distributed technological architectures complicate traditional accountability mechanisms (De Filippi & Wright, 2018).

These governance uncertainties represent significant institutional risks for waqf administration, as accountability and transparency remain fundamental requirements for maintaining public trust and ensuring compliance with Shari'ah governance principles. Consequently, emerging digital infrastructures require adaptive governance mechanisms capable of preserving the ethical and legal integrity of waqf institutions.

4.8. Analytical Synthesis and Thematic Validation

Seven themes emerged from an iterative thematic analysis of documentary sources supported by a structured coding process. The analysis began with a systematic review of relevant legal enactments, policy documents, institutional reports, and regulatory guidelines concerning waqf governance and digital initiatives in Malaysia. Open coding was first applied to identify recurring governance patterns and institutional concerns, followed by axial coding to organise these initial codes into broader analytical categories. This process revealed seven dominant themes capturing the institutional, legal, technological, and ethical tensions shaping the governance of smart waqf platforms. The recurrence of these themes across multiple documentary sources—including state enactments, regulatory reports, and institutional guidelines—strengthens the validity of the findings and suggests that the observed patterns reflect structural governance issues rather than isolated cases.

The findings indicate that the development of smart waqf platforms in Malaysia

is constrained primarily by institutional and governance factors rather than technological limitations. While digitalisation may enhance transparency and operational efficiency, its effectiveness depends on alignment between technological infrastructures and existing regulatory frameworks. From an institutional theory perspective, technological innovation remains embedded within established governance structures that shape adoption and functionality (North, 1990; Scott, 2014). In Malaysia, decentralised authority under State Islamic Religious Councils strengthens Shari’ah oversight but limits interoperability required for blockchain-based systems, while tensions also arise between automated blockchain logic and legally grounded institutional discretion (De Filippi & Wright, 2018; Werbach, 2018).

Table 2: Themes and Analysis Summary

Table main Theme	Sub-Themes (Nodes)	Analytical Focus
Jurisdictional Authority	State vs Federal Authority	Constitutional decentralisation: limits of harmonisation
	Role of SIRC's	Sole trusteeship; institutional dominance
Legal Recognition & Enforceability	Waqf Declaration Requirements	Role of waqif, courts, and SIRC's
	Land Registration & Title	Non-recognition of blockchain records
	Cross-State Enforceability	Interoperability constraints
Shari’ah Governance Structures	Mutawalli Authority	Fiduciary duties; discretion limits
	Shari’ah Oversight Mechanisms	Fatwa committees; approval processes
	Accountability Mechanisms	Auditability; reporting; supervision
Digitalisation & Automation	Digital Registry	Recognition of online records
	Smart Contracts	Automation vs discretionary governance
	Oracle & Data Risk	External data dependency
Institutional Fragmentation	Legislative Variation	Differences across state enactments
	Enforcement Capacity	Penalties; dispute resolution pathways

Ethical & Normative Concerns	Maṣlahah & Public Interest	Welfare prioritisation
	Discretion & Error Correction	Limits of rigid code-based execution
Governance Gaps & Tensions	Technology–Law Mismatch	Blockchain vs legal formalism
	Authority Attribution	Liability in automated systems

4.9. Findings and Thematic Analysis

We conducted a thematic analysis of documentary data Braun and Clarke (2006), doing so in an iterative manner guided by the set of codes listed in Table 2. From the analysis, it was found that there are seven relatively inseparable governance themes which reflect the various institutional, legal and Shari'ah governance issues relevant to smart waqf platforms development in Malaysia. The rigour of analysis is ensured by every theme being underpinned on academic literature and illustrated through examples from statutory frameworks, policy documents and institutional governance arrangements. In addition, discussion is thematic to the research question of this study pertaining perception of regulatory concern, enforceability in law and issue of Shari'ah governance regarding administration of blockchain based waqf. Both kinds of research while trying to reiterate that the outcome is an empirical examination on those documents, in addition to with existing literature around waqf's governance, Islamic social finance and digital transformation within organisations that complemented both with their findings.

Model Structure Example 1 Theme

Institutional Pre-Eminence of Constitutional Decentralisation

Based on the analysis, one indispensable limitation of smart waqf governance platforms adopted in Malaysia is the jurisdictional authority. Waqf is a state matter as provided for in the Ninth Schedule of the Federal Constitution, just like all other matters under Islamic law. Thus, the SIRC can only be a waqf asset trustee and at the same time also become the highest authority in waqf administration. The results of this study further affirm existing literature around Malaysian waqf that suggest fragmentation in the governing

of the institutions, and a focus on institutional hegemony that is embedded within SIRC's (Hassan et al., 2019; Pitchay et al., 2020; Arif, 2023). This decentralization enhances Shari'ah legitimacy and accountability at the state level, but restricts the functioning of cross-jurisdictional digital platforms that rely on regulatory interoperability. This was made apparent in the Selangor Waqf Enactment 2015, which established waqf as an entity providing for the Islamic religious council of Selangor to be one and only trustee governing waqf assets while supervising mutawalli. Other state enactments contain similar provisions but have different nuances as to authority and mechanisms of enforcement. These differences signify that the digital waqf platforms cannot function in a common regulatory framework.

This theme directly addresses the first research question of how regulatory institutions conceptualize and understand their constituencies, namely innovative waqf platforms. From our analysis of the post forwaqf documents, at the level of management and administration challenges seem to be prevalent but few have recognized these initiatives as independent governance tools that would remove them from those present institutional authorities.

4.10. Digitalisation and Automation: Efficiency Without Legal Autonomy

Recent policy initiatives increasingly emphasise the digitalisation of the waqf sector as a means to enhance transparency, accountability, and operational efficiency. For instance, national policy frameworks such as the Waqf Development Blueprint 2023–2035 identify digital registries, standardised reporting mechanisms, and online fundraising platforms as central components of Malaysia's broader strategy to modernise waqf administration (Almakaty, 2025). Nevertheless, the present analysis indicates that these initiatives remain largely administrative rather than legally transformative. Although digital records and tokenised representations of waqf assets can improve documentation and monitoring processes, they do not currently possess independent legal recognition within Malaysia's statutory land governance framework under the National Land Code 1965. Consequently, blockchain-

based records function primarily as quasi-governance instruments that support institutional oversight rather than as legally authoritative registers.

This finding aligns with broader scholarly concerns suggesting that technological innovation within Islamic social finance does not automatically resolve underlying governance challenges (Ascarya & Sukmana, 2023; Lahsasna & Hassan, 2021). While blockchain technology offers potential advantages such as immutability, transparency, and improved auditability, waqf governance inherently involves contextual prudential judgment, ethical discretion, and institutional supervision—elements that cannot be fully automated. The thematic findings therefore highlight emerging governance tensions associated with smart-contract-based waqf systems, particularly in relation to accountability, Shari'ah oversight, and institutional authority.

Overall, the results demonstrate that Malaysia's decentralised waqf governance framework significantly shapes regulatory perceptions and practical management approaches toward digital waqf platforms. Regulators and waqf institutions largely view these platforms as administrative enablers rather than autonomous governance systems. Accordingly, the sustainable development of intelligent waqf platforms depends not only on technological capabilities but also on the alignment between digital innovation, institutional governance structures, and adaptive Shari'ah oversight mechanisms.

5. Conclusions

This study critically examines the Shari'ah governance challenges associated with smart waqf platforms within Malaysia's decentralised regulatory and institutional framework. Based on qualitative analysis of legal enactments, policy instruments, and Shari'ah governance documents, the findings indicate that although Malaysia has made progress in modernising waqf administration through digitalisation initiatives, institutional readiness for blockchain-based waqf platforms remains uneven and structurally constrained.

Addressing the first research question, the analysis shows that regulators and waqf institutions largely perceive innovative waqf platforms as administrative

tools rather than autonomous legal systems. Legal enforceability and Shari'ah authority remain anchored in established institutions, particularly State Islamic Religious Councils (SIRCs) and Syariah courts. Consequently, blockchain records, smart contracts, and tokenised waqf assets operate as supplementary mechanisms requiring institutional validation.

Regarding the second research question, governance challenges arise from tensions between automated technologies and traditional oversight mechanisms. Existing Shari'ah governance models depend on human discretion, ex-ante approval, and post-hoc supervision, which are difficult to reconcile with self-executing smart contracts. Issues such as mutawalli discretion, error correction, oracle reliability, and liability allocation further complicate governance. Overall, the study finds that institutional misalignment—rather than technological limitations represents the primary barrier to sustainable smart waqf implementation in Malaysia.

6. Recommendations

This study proposes a governance framework that balances technological innovation with Shari'ah legitimacy and legal enforceability in digital waqf initiatives. JAWHAR and State Islamic Religious Councils (SIRCs) could establish a harmonised national reference framework for digital waqf governance that facilitates coordination while respecting the constitutional boundaries between federal and state authorities. Within this framework, digital and blockchain-based waqf records should be recognised as governance and audit tools that complement—rather than replace—statutory land registration requirements.

Given the risks associated with automated execution in smart contracts, governance mechanisms should extend beyond traditional ex ante Shari'ah approvals to include continuous monitoring, error-correction processes, and clearly defined accountability among mutawalli, Shari'ah committees, and technology providers. Such measures are necessary to safeguard public trust, which remains central to Shari'ah-compliant waqf governance.

These recommendations are derived from qualitative institutional analysis and therefore require empirical validation. Future research should evaluate digital waqf performance, stakeholder perceptions, and operational outcomes. Pilot implementations combined with institutional capacity-building programs may enable Malaysia to gradually implement smart waqf initiatives while maintaining legal coherence, ethical integrity, and institutional sustainability.

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