

Building Economic Resilience through Digital Waqf: The Utilization of Circular Economy-Based CWLS for MSMEs

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Abstract: Micro, Small, and Medium Enterprises (MSMEs) are the backbone of the economy as well as the pillar of cultural and social resilience in Indonesia. However, this sector faces a massive financing gap estimated at US\$235 billion due to limited access to formal banking systems. As a solution, the *Cash Waqf Linked Sukuk* (CWLS) offers a substantial funding potential of up to IDR 180 trillion annually. Unfortunately, the current utilization of CWLS yields remains heavily concentrated on one-off physical infrastructure developments and has not yet addressed the fundamental needs of the productive business sector. This conceptual article aims to formulate a novel governance framework that integrates Islamic social and commercial finance to overcome this structural barrier. Utilizing a theory adaptation approach, this study proposes a utilization model based on "circular economics," wherein sukuk yields are transformed into an interest-free revolving fund for MSMEs. To ensure precise targeting, waqf management institutions (*Nazhir*) must collaborate with Shariah-compliant Financial Technology (FinTech) platforms. Employing an Artificial Intelligence-based Alternative Credit Scoring system, MSME creditworthiness is evaluated not only on financial capacity but also on the assurance that the business is *halal* and environmentally sustainable, strictly aligning with the principles of eco-theology. Furthermore, this management framework is supported by an independent *Digital Waqf 4.0* infrastructure utilizing blockchain technology to guarantee absolute transparency. Validated through the systemic approach of *Maqashid al-Shariah*, the provision of this equitable and eco-friendly capital represents a concrete measure to protect society from predatory lending practices. In conclusion, the optimization of CWLS through this circular economic scheme not only financially empowers MSMEs but also serves as a pivotal instrument in building economic resilience and safeguarding the cultural dignity of the society in navigating the challenges of the multipolar era.

Keywords: Micro, Small and Medium Enterprises (MSMEs); *Cash Waqf Linked Sukuk* (CWLS); *Digital Waqf*; Circular Economics; Eco-theology.

Introduction

The current shift in the global political and economic order has ushered human civilization into a multipolar era, wherein centers of power are no longer dominated by a single hegemonic force. In a multipolar era, the cultural resilience of a nation or civilization can no longer be passively sustained merely through the preservation of traditions, arts, or religious dogmas. True cultural resilience must be underpinned by a foundation of independent and equitably distributed economic sovereignty within the society. In Indonesia, the entity at the absolute forefront of maintaining the pulse of this economic sovereignty is the Micro, Small, and Medium Enterprises (MSMEs) sector. Historically and empirically, MSMEs serve as the backbone of the economy and the primary pillar of social stability that directly nurtures the cultural fabric at the grassroots level (Aprilia et al., 2025; Sinha et al., 2024). MSMEs are not merely market instruments designed to generate profit, but rather strategic pillars that democratize wealth distribution, foster familial independence, and ensure the continuous functioning of societal life even amidst crises.

Despite the widespread recognition of this fundamental role reflected in the MSMEs' contribution of over 60% to the national Gross Domestic Product (GDP) and their unparalleled capacity to absorb the majority of the workforce this sector exists within a deeply paradoxical reality. Millions of small-scale entrepreneurs persistently encounter fundamental difficulties in accessing financial services from formal banking institutions (IMF, 2024; Saifurrahman & Kassim, 2023). This systemic exclusion is not a coincidence, but rather a deterministic outcome of conventional banking systems that procedurally mandate strict physical collateral and impose prohibitive commercial interest rates (IMF, 2024; Mohammed et al., 2025). Such rigid regulations systematically marginalize small business actors who lack tangible physical assets to pledge, rendering them categorically unbankable.

Evidence of this disparity is glaringly apparent in data from the Financial Services Authority (OJK), which records that the proportion of national bank credit disbursement for MSMEs remains stagnant at 18.42% of total financing (Otoritas Jasa Keuangan, 2025). The reluctance of formal banking institutions to descend to this micro-level triggers the phenomenon of "the missing middle," a condition wherein small enterprises lose the capacity to upgrade or expand their production capacity due to an absolute lack of capital. Data from the International Finance Corporation (IFC) paints an even more concerning picture, estimating that MSMEs in Indonesia are currently suffering from a severe financing gap reaching US\$235 billion (International Finance Corporation, 2023). Consequently, deprived of access to healthy capital, many entrepreneurs are forced to take shortcuts by borrowing

from loan sharks or unregulated digital lending platforms (predatory lending). These lending practices, characterized by exorbitant interest rates, not only stifle the potential for business growth but also destroy the social fabric, devastate household economies, and ultimately erode the cultural resilience of the community itself.

Confronted with this massive structural issue, conventional economic approaches have proven to be inadequate. An alternative financing paradigm capable of integrating commercial efficiency with the values of social concern is urgently required (Halme & Laurila, 2009). Within the context of Indonesia's Muslim-majority society, Islamic Social Finance emerges as a highly rational solution (Latifah et al., 2025). Unlike conventional banking, Islamic social finance instruments are capable of providing funding capital entirely free from interest burdens (cost of funds), making them highly accommodating and suitable for the financial realities of the community at the micro-level.

Currently, one of the most promising innovations in Islamic social finance is the Cash Waqf Linked Sukuk (CWLS) (Maulina et al., 2023). This instrument represents an ingenious amalgamation of public philanthropic zeal (cash waqf) with sovereign investment vehicles in the form of Sovereign Islamic Securities (SBSN) (Andika & Marwadi, 2025). The potential for cash waqf in Indonesia is extraordinary; data estimates that its capacity could exceed Rp180 trillion annually (Maulida, 2025). Under the CWLS scheme, cash waqf from the public is invested in sovereign sukuk, ensuring that the principal value is guaranteed to be one hundred percent secure and intact. Meanwhile, the returns from these investments which maintain a relatively stable yield exceeding 5.5 percent per annum are fully channeled into social programs (OJK, 2023). With such immense potential liquidity, CWLS inherently possesses the power to function as a *riba*-free capital reservoir capable of systematically resolving the financing deficit for MSMEs.

In practice, however, this immense potential remains largely unrealized. Although the government has successfully issued several series of retail CWLS, the volume of cash waqf mobilized remains minuscule, sitting well below one percent of its total potential (Lubis & Marpaung, 2025). Of greater concern is the manner in which the returns from these CWLS investments are expended. Currently, the vast majority of waqf sukuk investment yields are predominantly channeled into the construction or renovation of physical infrastructure, such as places of worship or medical clinics (Shofiatin et al., 2025). While undoubtedly noble in intent, this one-off charity approach possesses a fundamental flaw: the funds become permanently sequestered within physical structures, causing their economic velocity to halt completely.

Within the disciplines of economics and environmental governance, freezing immense resources in passive assets while millions of small economic actors face severe capital starvation can be viewed as a profound inefficiency, aligning with the Islamic critique of wastefulness (*Israf*). Expenditures that fail to generate a multiplier effect fundamentally contradict the principles of circular resource models (Mariolis & Tsirimokos, 2024). The allocation of waqf returns would be significantly more productive and contemporary if transformed into a revolving fund scheme. Through a circular economy approach, the same capital can be lent interest-free to an MSME actor, and upon repayment, it is continuously recycled and lent to other entrepreneurs (Nurranti & Jati, 2026). The primary operational bottleneck preventing waqf management institutions (*Nazhir*) from executing this is their profound fear of default risk, given their inadequate capacity to assess a borrower's creditworthiness.

This operational gap underscores a conspicuous void within the academic literature. Previous studies on cash waqf or CWLS predominantly revolve around jurisprudential (*fiqh*) issues, government regulations, or strategies to enhance public literacy (Maulina et al., 2023). There is a severe scarcity of research offering an actionable operational framework for safely managing and channeling CWLS yields into the real sector. To address this gap, this study is structured as a conceptual article proposing the utilization of digital technological innovations to bridge the institutional weaknesses of traditional waqf agencies.

Responding to the imperative for the Integration of Knowledge and Sciences, this article formulates a "CWLS Optimization Framework" that mandates waqf management institutions to collaborate with Shariah-compliant Financial Technology (FinTech) platforms. Through the deployment of an Artificial Intelligence-driven Alternative Credit Scoring system, the creditworthiness of an MSME can be accurately evaluated via their digital footprint, even in the absence of physical collateral such as land or building certificates. Beyond merely assessing financial capacity, this artificial intelligence algorithm must also be engineered to strictly align with Eco-theological principles. Consequently, the system can be programmed to systematically filter and reject capital applications from enterprises implicated in environmental degradation, river pollution, or those lacking a halal supply chain. This technological injection is further complemented by the integration of a blockchain system within the Digital Waqf 4.0 ecosystem to guarantee absolute, immutable recording transparency a critical step in maintaining public trust.

Ultimately, this entire conceptual framework is validated using the *Maqashid al-Shariah* approach. The utilization of digital technology to transform waqf returns into revolving capital for grassroots communities is not merely a matter of financial modernization. It is a tangible manifestation of the effort to protect public wealth (*Hifz al-Mal*) from oppressive economic practices, while simultaneously ensuring environmental preservation (*Hifz al-Biah*). Through the integration of the spiritual power of waqf, circular economy principles, and advanced digital science, this governance framework is expected to provide a concrete intellectual contribution toward

building the sovereignty and resilience of the Malay-Islamic civilization amidst the complex challenges of the multipolar era.

Method

This study is structured as a conceptual paper aimed at systematically reformulating the structural financing governance within the Micro, Small, and Medium Enterprises (MSMEs) sector. Given that the primary objective of this research is not to conduct empirical hypothesis testing, but rather to instigate a fundamental perspective shift within the governance of Islamic philanthropy, the conceptual framework is constructed utilizing the Theory Adaptation design introduced by Elina Jaakkola (Jaakkola, 2020). Distinct from alternative conceptual methodologies such as Theory Synthesis or Typology, theory adaptation was deliberately selected because it specifically endeavors to refine and expand the conceptual boundaries of an established theory by importing insights from entirely disparate theories or disciplines. Consequently, this methodological approach effectively generates an alternative frame of reference capable of resolving existing theoretical impasses.

To ensure methodological rigor, the formulation of the hybrid financing model in this article is executed through four progressive analytical stages (Jaakkola, 2020):

1. **Problematization:** This initial stage meticulously dissects the systemic inefficiencies inherent in the current distribution practices of Cash Waqf Linked Sukuk (CWLS) yields, which remain predominantly centered on the development of one-off charitable physical facilities. This linear philanthropic practice is directly juxtaposed against the severe macroeconomic reality of the high capitalization deficit among MSMEs, thereby justifying the urgent necessity of transforming toward a circular economy system.
2. **Domain Theory Identification:** The domain theory defines the foundational knowledge structure currently under evaluation and serves as the primary focus of the research contribution. In this study, the domain theory is the Traditional Waqf Governance Paradigm and Social Financial Intermediation, which is identified as possessing inherent structural weaknesses, most notably a paralyzing degree of risk aversion among *Nazhir* and an absolute dependence on physical collateral.
3. **Method Theory Application:** The method theory functions as a meta-level conceptual system designed to resolve existing problems within the domain theory and provide alternative explanatory frameworks. This study adopts the "Financial Technology (FinTech) Ecosystem and Circular Economy Innovation Theory" as its novel analytical lens. This lens strategically injects the artificial intelligence-driven Shariah-Compliant Alternative Credit Scoring (SC-ACS) algorithm alongside strict eco-theological criteria to precisely mitigate default risk while simultaneously screening the environmental compliance of business actors.
4. **Means of Adaptation and Validation:** In the final synthesis phase, the unidirectional flow of sukuk yields is reconstructed into a continuous revolving fund facility. The teleological viability of this novel architectural model is subsequently validated utilizing Jasser Auda's systemic approach to *Maqashid al-Shariah* to ensure that this cross-disciplinary integration of science multidimensionally protects public welfare.

The conceptual synthesis process outlined above is supported by a rigorous secondary literature extraction strategy. An extensive literature search was conducted across reputable academic databases (such as Scopus and Web of Science), strictly limited to publications within the last five years. The search keywords utilized encompassed intersections between Cash Waqf Linked Sukuk, Islamic circular economy, alternative credit scoring, eco-theology, and blockchain. Inclusion criteria were heavily focused on top-quartile peer-reviewed journal articles and official reports published by global monetary authorities. This literature review was subsequently triangulated with an in-depth analysis of policy documents from the Financial Services Authority (OJK), the Indonesian Waqf Board (BWI), and the Central Bank of Malaysia (BNM), as well as macroeconomic data sourced from the World Bank and the International Finance Corporation (IFC).

Results and Discussion

1. Transitioning CWLS Governance: From Linear Philanthropy to a Circular Economy Paradigm

A critical examination of the contemporary governance practices of Islamic social financial instruments in Indonesia indicates the absolute hegemony of a linear philanthropic approach (Prasetyo et al., 2025). Within the current retail Cash Waqf Linked Sukuk (CWLS) ecosystem, cash waqf funds mobilized from the public are channeled directly as investment capital into Sovereign Islamic Securities (SBSN). From a macroeconomic perspective, this mechanism is fundamentally highly effective in mitigating market vulnerability, as the principal value of the waqf funds is absolutely protected by a sovereign entity (the state) (Rahmani & Prasetyo, 2024). However, profound systemic inefficiency begins to manifest during the distribution phase of its yields. The mainstream allocation of returns from this multi trillion rupiah instrument is persistently directed toward purely charitable infrastructure projects, such as the renovation of places of worship or the provision of medical facilities managed by *Nazhir* (waqf management institutions).

This approach, which heavily relies on one-off physical construction (*one-off charity*), represents a linear economic model (take-make-dispose) or, within the specific context of philanthropy, a collect-build-stagnate paradigm (Mubarok et al., 2024). When juxtaposed against the empirical reality wherein Indonesia's economic structure is severely pressured by a capitalization crisis within the Micro, Small, and Medium Enterprises (MSMEs) sector with a deficit reaching US\$235 billion freezing public liquidity in passive assets can be viewed as a profound governance weakness (Pamungkas, 2025). Within Shariah discourse, this phenomenon directly intersects with the critique of the prohibition of *Israf* (wastefulness or the systemic misallocation of priorities). The absence of repetitive value creation within this management model explicitly underscores the urgent necessity for a paradigm reorientation toward a system that guarantees structural sustainability.

Addressing this problematization, this research formulates an institutional engineering framework that radically redirects the distribution of CWLS yields into an instrument of the Islamic Circular Economy. Conceptually, the circular economy within Islam is not merely understood as a physical waste reduction system, but rather as a holistic epistemology derived directly from the principles of *Khalifah fil Ardh* (humanity's active stewardship over the earth) and *Tawazun* (systemic equilibrium) (Fathma et al., 2025). The concrete implementation of this concept is realized by formally converting the accumulated sukuk yields into a revolving fund facility. Through this circular financing ecosystem, cash capital is channeled to MSME entities utilizing equitable contracts, such as *Qardh al-Hasan* (interest-free benevolent loans) or *Mudharabah* (profit-sharing). Once the MSME actors successfully complete their business cycles and amortize the principal capital, this identical liquidity does not stagnate; rather, it is immediately recycled and disbursed to other micro-entrepreneurs in a continuous, relay-like manner.

These unbroken resource loops logically ensure that the financial utility derived from a single sovereign waqf entity will never experience existential degrowth. On the contrary, this circular model will exponentially accumulate a multiplier effect, democratize justice horizontally, and subsequently cultivate massive socio-economic resilience directly at the grassroots level. The national cash waqf potential, estimated to reach Rp180 trillion annually, now possesses a highly rational conduit instrument capable of gradually yet permanently dismantling the structural deficit paralyzing the MSMEs.

2. The Integration of Science and Financial Technology: SC-ACS and Eco-Theological Parameters

The circular economy concept through revolving funds encounters a practical challenge that constitutes the primary cause of stagnation on the ground: information asymmetry triggering institutional reluctance. Traditional *Nazhir* institutions, characterized by a purely charitable governance background, are generally unequipped with adequate credit risk management capabilities (such as the 5C analysis) (Lubis et al., 2025). The absence of expertise in analyzing financial ratios, compounded by the fact that the majority of ultra-micro MSMEs lack assets eligible for encumbrance (physical collateral), compels *Nazhir* to adopt a posture of extreme risk aversion. They opt to distance themselves from the productive real sector to avoid legal repercussions stemming from waqf mismanagement.

To definitively shatter this functional isolation, this framework proposes a cross-disciplinary hybrid synergy between traditional philanthropic institutions and commercial computer science innovations. This synergy actualizes the imperative advocated within the discourse of the *Integration of Knowledge and Sciences*. The framework mandates an operational merger between *Nazhir* consortiums and registered Shariah-compliant Financial Technology (FinTech) service providers. This unification enables waqf institutions to leverage the alternative creditworthiness assessment infrastructure, or Alternative Credit Scoring (ACS), driven by Artificial Intelligence algorithms.

The ACS system operates by deconstructing the conventional banking paradigm. Rather than demanding formal balance sheets or land certificates, artificial intelligence executes big data extraction from the digital footprint of prospective borrowers (MSMEs) (Rajput & Shaikh, 2026). Non-traditional data points such as the consistency of daily cash flows through digital payment gateways (e.g., QRIS), the track record of basic utility payments (electricity and water), inventory turnover intensity within supply chains, and communication responsiveness on e-commerce platforms are computationally analyzed to predict default probabilities with extraordinary precision (Zakariya & Arifin, 2025).

However, the mere efficiency of financial risk mitigation is insufficient to fulfill the ontological requirements of Islamic economics. Therefore, this framework evolves the instrument into a Shariah-Compliant Alternative Credit Scoring (SC-ACS) system. The most fundamental innovation of SC-ACS lies in the integration of Eco-theological parameters directly into its programming language. Islamic eco-theology is a discourse that weaves the Qur'anic worldview regarding humanity's role in maintaining cosmic balance (Systems Ecology) (Taufikin, 2025). In practical terms, SC-ACS is engineered to function dynamically as a creditworthiness evaluator and simultaneously as a screening engine for environmental and Shariah compliance (halal and green screening).

Algorithmically, the computational system will outrightly reject the disbursement of waqf capital if the MSME's supply chain data records indicate an affiliation with prohibited (non-halal) commodities or involvement in environmentally destructive business practices (e.g., destructive natural exploitation, poor sanitation

governance, or a documented history of toxic waste disposal violating regional regulations). The injection of Islamized Environmental, Social, and Governance (ESG) parameters into this artificial intelligence ensures that the CWLS facility transforms into a premier instrument of Green Waqf (Hussin et al., 2025). Through this rigorous eco-theological filter, the Malay-Islamic civilization institutionally rejects the financing of economic growth subsidized by the destruction of the earth (*fasad*), rendering it a tangible antithesis to extractive capitalism.

To operationalize the eco-theological concept into a measurable assessment architecture, the mathematical modeling within the SC-ACS system can be formulated through a hybrid variable weighting mechanism (Usman et al., 2019). Theoretically, the computational system establishes the final score equation via a linear aggregation function: $S_{\text{total}} = \alpha(F) + \beta(E) + \gamma(H)$, where F represents the financial viability score (extracted from digital transaction footprints and utilities), E denotes the ecological compliance score (waste governance and carbon emissions), and H signifies the supply chain halal score. The weighting is allocated to reflect the equilibrium of *Maqashid*, assuming, for example, the values $\alpha = 0.40$, $\beta = 0.40$, and $\gamma = 0.20$.

As a hypothetical simulation to test the resilience of this model, assume an application for CWLS revolving capital from a Tofu-Tempeh Processing MSME 'X'. Based on data scanning, this MSME exhibits highly robust digital cash turnover (QRIS) fluency, prompting the machine to assign a high financial score ($F = 85$). However, the spatial computer vision modules and environmental grievance tracking data within the algorithm detect an anomaly: the factory is proven to discharge residual liquid production waste directly into the community river drainage system, consequently decimating its ecological score ($E = 30$). Although its soybean raw materials are certified halal ($H = 90$), the final SC-ACS calculation yields the determination: $S_{\text{total}} = (0.40 \times 85) + (0.40 \times 30) + (0.20 \times 90) = 34 + 12 + 18 = 64$.

Given that the *Nazhir* authorities and the platform have established an absolute passing grade threshold at a minimum score of 75, the protocol automatically suspends the credit approval. To definitively avoid the "black-box" bias frequently criticized in the deployment of artificial intelligence, this system is seamlessly integrated with a Retrieval-Augmented Generation (RAG) module (Sudirman et al., 2025). The RAG module autonomously extracts references from the environmental jurisprudence knowledge base to generate a precise explanatory text for the borrower, for instance: "*Capital application suspended. Detected violation of Hifz al-Biah (pollution of public water sources). Productive waqf funds are ready for disbursement immediately upon the validated repair of the factory's sanitation filtration system.*" This simulation empirically confirms that SC-ACS functions not merely as a default probability calculator, but acts as an ethical arbiter that actively locks public capital away from entities generating systemic harm (*mudharat*).

3. Digital Waqf 4.0 Infrastructure and Blockchain: Financial Sovereignty in a Multipolar Era

The most crucial crisis within the modern Islamic social finance ecosystem is the profound public trust deficit. This reality is historically rooted in the reporting and auditing systems of philanthropic institutions, which have long been static, centralized, and strictly reactive (*ex-post transparency*). Financial reports presented months after the funds have been expended frequently generate severe information asymmetry among the *waqif* (donor), the manager (*Nazhir*), and the ultimate beneficiary (MSME) (Syahril et al., 2026). This opaque reporting void frequently incites public anxiety regarding the potential for *window dressing* (creative accounting manipulation) or the outright misappropriation of liquidity.

To address the fragility of this legacy recording infrastructure, this conceptual model advocates for a radical transition towards a "Digital Waqf 4.0" architecture, officially establishing Distributed Ledger Technology (DLT) universally known as blockchain as its foundational core (Hasan et al., 2025). The adoption of blockchain must not be reductively misinterpreted merely as document digitization. It constitutes a profound governance revolution that permanently replaces the model of *ex-post transparency* with an immutable framework of structural *ex-ante transparency* (Badawi, 2026).

The operational nucleus of this blockchain adoption within this framework revolves around the utilization of smart contracts. Smart contracts are self-executing lines of computer code that autonomously enforce an agreement without ever necessitating human intervention or costly third-party arbitration (Hartono, 2026). Within the circular CWLS ecosystem, the precise moment the SC-ACS algorithm approves the environmental and financial viability of an MSME, the smart contracts are triggered, and the revolving funds are instantaneously and inalterably transferred in a decentralized manner. The return mechanisms, including highly complex profit-sharing distributions, are executed with equal, flawless mathematical precision by the machine. Every single micro-movement of this capital from its initial release by the custodian bank, through its transit into the MSME's digital wallet (e-wallet), down to the exact percentage of the amortized return is permanently recorded onto a cryptographic ledger distributed across thousands of independent global computing nodes. This financial data is permanently locked, it is mathematically impossible to manipulate, alter, or erase by any entity, including the managing *Nazhir* or even sovereign government authorities (*immutable*).

This paradigm of data-driven auditing provides an absolute guarantee of legal certainty, wherein the broader public (including donors and the general populace) can independently monitor the specific trajectory of their philanthropic capital in real-time. Further analysis situates the adoption of blockchain within the context of

contemporary geopolitics. In a multipolar era explicitly characterized by the severe fragmentation of major power blocs, the defense of a civilization (*Geopolitical Resilience*) is intrinsically tethered to the sovereign control of its own data infrastructure and financial systems. The structural dependency of developing nations' financial institutions on centralized audit systems, rating agencies, and banking network infrastructures headquartered in hegemonic nations engenders acute, highly dangerous vulnerabilities to their sovereignty. By indigenously developing and commanding a decentralized, blockchain-based waqf accounting network, the Islamic economic ecosystem effectively issues a declaration of institutional independence. The resilience of the Malay-Islamic civilization (*Cultural Resilience*) is fundamentally fortified because it now possesses a cryptographic data fortress completely immune to political coercion, external intervention, or unilateral asset freezes orchestrated by the global financial architecture. The trust of the *ummah* (community) is preserved from within, secured by the very technology they independently command.

4. Empirical Benchmarking: Contrasting Strategic Flexibility with the iTEKAD Model

Any institutional architectural design, regardless of its progressiveness, necessitates empirical benchmarking to ensure it does not merely remain an academic illusion. Within the Southeast Asian Islamic finance ecosystem, the closest proxy for testing the concept of "hybrid philanthropic-commercial financing" is the successful implementation of the iTEKAD program in Malaysia. Initiated by the Central Bank of Malaysia (Bank Negara Malaysia or BNM) amidst the economic turbulence of the 2020 pandemic, the iTEKAD program perfectly demonstrates the operational viability of a blended finance model. iTEKAD effectively stitches together Islamic philanthropic capital specifically injections of zakat and cash waqf functioning as non-returnable seed capital with Shariah microfinancing schemes issued by major Malaysian commercial banks.

This program provides precise confirmation that the amalgamation of social instrument liquidity with commercial capital discipline is not merely possible, but highly rational for stimulating sustainable MSME growth. The success of iTEKAD relies on stringent risk mitigation, wherein capital disbursement runs parallel with structural capacity building and the inclusion of microtakaful (microinsurance) schemes to protect business entities against unexpected bankruptcy shocks (Jothi et al., 2025). These multi-layered protection elements align with the Three-Tiered Risk Mitigation proposed within the CWLS Optimization Framework, which encompasses: (a) artificial intelligence algorithmic screening, (b) sustainable business incubation, and (c) the establishment of liquidity buffers in the form of a Risk Backup Fund.

Despite sharing aligned ontological foundations, a comparative analysis reveals a sharp divergence regarding their social engineering approaches. The iTEKAD model is engineered as a massive, top-down initiative that relies absolutely on the hierarchical architecture of conventional and Islamic corporate banks dominating the market. While such a model is highly robust regarding initial liquidity, it frequently stumbles due to sluggish bureaucratic penetration and the exorbitant overhead costs inherent to massive banking infrastructures. Adopting an identical top-down pattern in Indonesia an archipelagic nation characterized by massive geographical and demographic complexity would inevitably result in a bottleneck concerning outreach to remote areas (Mubarak et al., 2024).

In stark contrast, the CWLS optimization instrument proposed in this study is designed utilizing a structural grassroots (*bottom-up*) approach. By deliberately decentralizing execution away from corporate banks and instead delegating the operational mandate to the collaborative efforts of *Nazhir* consortiums and Shariah Peer-to-Peer FinTech entities, the Indonesian model decisively achieves superior cost efficiency. FinTech entities operate without the burden of physical infrastructure; they are exceptionally agile and capable of penetrating financial inclusion down to the ultra-micro level (reaching traditional market vendors in coastal or mountainous regions) relying solely on smartphones. This benchmarking solidifies the argument that to effectively absorb hundreds of trillions of rupiah in liquidity into millions of demographically fragmented MSME nodes, decentralization through financial technology is vastly more relevant, agile, and promises a significantly higher probability of success compared to traditional centralized models.

5. Epistemological Analysis: Validating the Multidimensionality of Maqashid al-Shariah

The aforementioned series of cutting-edge technological interventions and the deconstruction of institutional governance would remain unacknowledged within the discourse of Islamic philosophy without a teleological foundation (ultimate objective) that aligns strictly with Shariah (Syafiuddin & Tristy, 2025). To prevent the blind, unguided deployment of technology (amoral technocracy), this article validates its conceptual framework utilizing the Systemic Approach to *Maqashid al-Shariah* conceptualized by contemporary thinker Jasser Auda. Auda's *Maqashid* ecosystem aggressively deconstructs the rigidity of classical jurisprudence (which tends to be literal-textualist) and offers a macro-system-based policy analysis, wherein Shariah regulations operate dynamically to unconditionally preserve human social justice (Nashuha et al., 2025).

Within classical readings of *Maqashid*, the utilization of interest-free financing instruments for vulnerable MSME groups is generally reduced merely to an economic protection mechanism *per se*, categorized under the

preservation of wealth (*Hifz al-Mal*). Auda unequivocally rejects this linear reductionism. Through the principle of Multidimensionality, this analysis proves that the structural stabilization of MSMEs generates a cascading "butterfly effect" of protection across multiple dimensions of civilization (Amar et al., 2025). When a micro-entrepreneur is liberated from the threat of forceful confiscation by predatory lenders, the resulting cash flow stability directly secures the family's right to adequate nutrition and healthcare services an absolute realization of the preservation of life and soul (*Hifz al-Nafs*). Furthermore, business profit margins strategically reinvested into children's education and the literacy capacity building of workers represent a concrete manifestation of upholding the preservation of intellect (*Hifz al-Aql*) and protecting the quality of future generations (*Hifz al-Nasl*). All these dimensions are organically interwoven.

Moreover, the validation of the FinTech ecosystem is grounded in the principles of Purposefulness and Openness. Sequestering massive waqf yields within slow-impact physical projects while the foundational structure of the economy is in a critical state is philosophically deemed a betrayal of the very purpose of Shariah itself (namely, the actualization of tangible public benefit or *jalb al-maslahah*). By demonstrating the courage to dismantle this linear order and exhibiting "openness" to the rapid adoption of cutting-edge computer science such as SC-ACS for environmental halal screening (eco-theology) and blockchain smart contract systems that eradicate manipulation potential Islamic economics distinctly showcases its progressive and highly rational character. Technology, in this context, has its intentions purified, transitioning from a mere instrument for individual capital accumulation into a protective engine for environmental equilibrium (*Hifz al-Biah*) and distributive justice.

Through the ultimate synthesis of the transcendent value of waqf, circular economy loops, earthly preservation awareness (eco-theology), and digital algorithmic intelligence, the Malay-Islamic civilization has concretely established its own unassailable economic fortress. It is precisely this institutional and cultural sovereignty that renders the nation resilient and independent amidst the volatile gravitational pulls of global politics in the multipolar era.

Conclusion

Based on the established analytical framework, this study concludes that the structural capitalization crisis amounting to a staggering US\$235 billion that currently paralyzes the MSME sector cannot be resolved by relying solely on conventionally managed philanthropic instruments. Utilizing a theory adaptation approach, this research formulates a novel governance engineering framework that transforms the allocation of Cash Waqf Linked Sukuk (CWLS) yields from a linear physical development model into a circular economy-based revolving fund facility. This circular model is logically proven capable of eliminating allocative inefficiency (*Israf*) while simultaneously accelerating productive economic velocity directly at the grassroots level.

Furthermore, this study demonstrates that the success of this financing model is highly contingent upon the cross-institutional integration of science and financial technology. The synergy between *Nazhir* institutions and Shariah-compliant FinTech through the Shariah-Compliant Alternative Credit Scoring (SC-ACS) instrument provides a definitive resolution to the prevailing issues of information asymmetry and the absence of collateral. Concurrently, this algorithm functions as an eco-theological instrument, rigorously screening business viability to ensure that no capital flows into entities responsible for environmental degradation. Fortified by the adoption of blockchain within the Digital Waqf 4.0 ecosystem, this framework generates structural (*ex-ante*) transparency capable of permanently restoring public trust.

Validated through the multidimensional approach of *Maqashid al-Shariah*, this synthesis of Islamic social finance, environmental preservation principles, and digital technology transcends the boundaries of a mere fiscal policy instrument. This optimization framework constitutes a profound manifestation of both informational and material sovereignty. Ultimately, it is this sovereignty that forms the absolute essential foundation in cultivating the cultural resilience and independence of the Malay-Islamic civilization in responding to the myriad volatilities of the multipolar era.

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