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Artificial Intelligence in Islamic Finance: Applications, Financial Inclusion, and Shari'ah Governance

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Abstract
The integration of artificial intelligence (AI) into Islamic finance has moved from a speculative topic to an active area of regulatory and academic concern, yet the literature remains fragmented across legal, bibliometric, and applied technical strands. This review synthesises twenty-two peer-reviewed studies published between 2018 and 2026 to answer three questions: where AI is being applied across the Islamic finance value chain, whether AI adoption advances financial inclusion in developing and Muslim-majority economies, and what governance safeguards the literature proposes for keeping AI-enabled decisions within the bounds of Shari'ah. The review finds consistent evidence that AI is already embedded in front-office functions such as credit scoring and Takaful underwriting, middle-office functions such as anti-money laundering and know-your-customer screening, and back-office functions such as Sukuk portfolio optimisation and regulatory technology compliance. Cross-country econometric evidence links AI adoption to gains in financial inclusion, though the relationship is uneven across income groups, and emerging applications in zakat and waqf administration extend this potential into Islamic social finance specifically. The governance literature converges on a shared concern: the absence of legal frameworks and Shari'ah board technical capacity to audit algorithmic decisions for transparency, fairness, and alignment with maqasid al-shari'ah, a concern that mirrors, and in some respects sharpens, the wider evidence on algorithmic bias in conventional credit scoring. The review closes by considering what these findings imply for Islamic financial institutions operating in Somalia and the wider Horn of Africa, and by identifying gaps, principally the scarcity of empirical, sub-Saharan African evidence, that future research should address.

Keywords: Artificial intelligence, Islamic finance, Shari'ah governance, Financial inclusion, RegTech, Maqasid al shari'ah, Somalia

1. Introduction

Islamic finance has grown into a global industry with assets exceeding three trillion US dollars, built on the prohibition of interest (riba), excessive uncertainty (gharar), and unethical investment, and organised instead around risk sharing and asset-backed financing (Dey, 2025a). Over the past decade, the same forces that have reshaped conventional banking, namely expanding computational power, richer transaction data, and maturing machine learning methods, have begun to reach Islamic financial institutions, prompting scholars and regulators to ask how far artificial intelligence (AI) can be absorbed into a system whose legitimacy rests on demonstrable Shari'ah compliance rather than on commercial logic alone (Arsyad et al., 2025; Azwar et al., 2025).

The appeal is straightforward. AI promises faster credit decisions, more accurate fraud detection, and cheaper compliance monitoring, all of which matter in markets where Islamic banks compete with conventional lenders for retail and small business customers (Khan et al., 2021; Rahim et al., 2018). It also promises something of particular relevance to the region in which this review is situated: a route to financial inclusion for the large unbanked populations of the Horn of Africa and other Muslim-majority developing economies, where formal banking penetration remains low and where reluctance to engage with interest-based finance persists (Kshetri, 2021; Mhlanga, 2020, 2021).

Somalia illustrates the stakes of this question with unusual clarity. The country's banking system operates almost entirely on Islamic principles, its Central Bank licenses commercial banks on a Shari'ah-compliant basis, and its population has, since the collapse of formal banking in the early 1990s, built one of the most extensive mobile money ecosystems in the world through services such as EVC Plus, Zaad, and Sahal. This combination of near-universal religious expectation and mature digital payment infrastructure, discussed further in Sections 4 and 6, means that any AI-enabled Islamic finance product introduced in Somalia would be tested simultaneously against two demanding standards, technical reliability and unambiguous Shari'ah legitimacy, in a market where the institutions best placed to certify the second of these are, on current evidence, the least equipped to evaluate the first.

Yet the properties that make AI attractive, its capacity to learn patterns from data and to act with limited human intervention, sit uneasily beside the requirement that every Islamic financial product be demonstrably compliant with Shari'ah at every stage of its design and operation. Algorithms trained on historical data can encode bias, obscure the basis for a decision, and outpace the supervisory capacity of Shari'ah boards not trained in data science (Zulkepli et al., 2026; Iqbal et al., 2025). This last concern is not unique to Islamic finance. Noreen et al. (2026), synthesising fifteen empirical studies drawn from a corpus of fifty-five peer-reviewed papers on conventional AI credit scoring, conclude that algorithmic bias originates chiefly from historically generated training data rather than from technical failure alone, and is then amplified through proxy variables and profit-driven model objectives, with gender and socioeconomic disparities the most consistently documented outcomes. For Islamic financial institutions, the same mechanism carries an additional layer of risk, because a biased or opaque credit model is not only an ethical and reputational problem in the conventional sense but a potential breach of the fairness and non-exploitation principles that maqasid al-shari'ah is meant to safeguard. Bibliometric work tracking the field since 2010 shows publication volume rising sharply only after 2020, which is evidence that the literature is still-consolidating around a shared vocabulary and a shared set of open questions rather than converging on settled answers (Iqbal et al., 2025; Azwar et al., 2025).

This review draws that emerging literature together to answer three questions: first, where in the Islamic finance value chain AI is actually being applied; second, what evidence exists that AI adoption advances financial inclusion, including through the specific channel of Islamic social finance instruments such as zakat and waqf; and third, what governance safeguards the literature proposes for keeping AI-enabled decisions within the bounds of Shari'ah. The synthesis is written for an audience of bank supervisors, Shari'ah scholars, and university researchers in Islamic banking and finance, for whom the live question is no longer whether AI will enter Islamic finance, but how its entry can be governed responsibly. The remainder of the article proceeds as follows. Section 2 sets out the review methodology. Sections 3 to 5 present the thematic synthesis, covering AI applications across the value chain, AI and financial inclusion, and Shari'ah governance and ethics respectively. Section 6 discusses the implications of these findings for Somalia and the wider Horn of Africa. Section 7 sets out the review's limitations and proposes directions for future research, and Section 8 concludes.

2. Review Methodology

This is a narrative and integrative literature review rather than a fully registered systematic review. Peer-reviewed articles, book chapters, and conference proceedings published between 2018 and 2026 were located through academic literature search using combinations of the terms "artificial intelligence," "machine learning," "Islamic finance," "Islamic banking," "Shari'ah compliance," "financial inclusion," "zakat," "waqf," and "RegTech/SupTech." Sources were retained where they addressed AI applications, adoption, or governance specifically within Islamic financial institutions, or where they examined AI and financial inclusion, algorithmic fairness, or digital Islamic social finance in ways directly relevant to Muslim-majority markets. Studies were excluded where AI was mentioned only in passing, where the empirical setting bore no plausible relevance to Islamic or developing-economy finance, or where the source was not peer-reviewed and not otherwise a recognised institutional report. Twenty two studies met the inclusion criteria and form the evidentiary base for the synthesis that follows; they range from doctrinal legal analyses comparing regulatory regimes across Indonesia, Malaysia, Hong Kong, and the United Arab Emirates (Arsyad et al., 2025), to bibliometric mappings of the Scopus and Web of Science-indexed literature (Iqbal et al., 2025; Azwar et al., 2025), to empirical panel data studies of AI and financial inclusion spanning dozens of countries (Akram et al., 2025; Subramaniam et al., 2024, 2026), to applied design studies of blockchain and AI-enabled zakat and waqf administration (Hamzah et al., 2024) and of algorithmic bias in credit scoring more generally (Noreen et al., 2026). Of the twenty-two studies, seven are best characterised as doctrinal or bibliometric, nine as quantitative or econometric, four as conceptual or framework-building, and two as applied design or case studies; this mix shapes the balance of the review, which is necessarily weighted toward synthesis of arguments and patterns rather than toward a single dominant methodology. Findings are organised thematically rather than study-by-study, consistent with standard practice for narrative reviews of an emerging, still-consolidating field. As with any narrative synthesis, the selection and weighting of studies reflects the reviewer's judgement about relevance rather than a fully reproducible protocol, a limitation returned to in Section 7.

3. AI Applications Across the Islamic Finance Value Chain

A recurring organising device in the legal and technical literature is the division of Islamic financial institutions into front, middle, and back-office functions, each exposed to a different set of AI applications and a different set of Shari'ah compliance risks (Arsyad et al., 2025).

3.1 Front office applications

In the front office, AI is used to simplify credit evaluation, automate Takaful (Islamic insurance) underwriting, and power conversational interfaces for customers (Arsyad et al., 2025). Khan et al. (2021) propose what they describe as the first natural language processing chatbot built specifically to deliver Shari'ah-compliant financial advice, arguing that customer engagement, already central to conventional retail banking, is at least as important in Islamic finance, where customers frequently need a product's compliance basis explained in plain terms. Predictive and machine learning credit scoring models extend this front-office layer by assessing borrower behaviour from alternative data sources while filtering out interest bearing instruments and screening investment targets against Shari'ah compliance criteria (Dey, 2025a, 2025b). Robo-advisory tools built for Shari'ah-compliant portfolios follow the same logic, translating investment principles such as the avoidance of gharar and impermissible sectors into automated screening rules (Rahim et al., 2018; Mohammed et al., 2021). Precisely because these front-office tools make consequential decisions about individual customers, they are also the applications most exposed to the algorithmic bias risks documented in the wider credit scoring literature discussed in Section 5.

3.2 Middle office applications

In the middle office, AI is most visible in anti-money laundering and counter-terrorist financing screening, know-your-customer verification, and fraud detection, where machine learning models analyse transaction patterns for anomalies that would be difficult for rule-based systems to catch (Arsyad et al., 2025; Dey, 2025a). These functions are not unique to Islamic finance, but the literature notes that they interact with Shari'ah requirements in a specific way: an anti-money laundering model tuned on conventional bank transaction data may not recognise the transaction structures typical of murabaha, ijara, or musharaka contracts, and can generate compliance friction rather than compliance assurance if deployed without adaptation (Hadi et al., 2021).

3.3 Back office and regulatory technology applications

In the back office, AI supports capital management, market impact assessment, and portfolio and Sukuk optimisation, and it substantially strengthens regulatory technology and supervisory technology, improving the effectiveness of regulatory compliance and supervision across the sector (Arsyad et al., 2025). Predictive learning applications extend this to Sukuk structuring and pricing, where large historical datasets and alternative credit signals are used to widen access to Shari'ah-compliant financing instruments while reducing reliance on conventional interest-based credit assessment (Dey, 2025b). Natural language processing systems that read and classify legal and contractual text are increasingly proposed as a way to detect non-compliant clauses in financial contracts before they are executed, an application that sits at the boundary between back-office efficiency and governance assurance (Dey, 2025a). A related and still nascent back-office application, discussed further in Section 4, extends these same techniques from commercial Islamic finance into the administration of zakat and waqf, where AI-assisted verification and blockchain-based recordkeeping are being piloted to strengthen transparency in the collection and distribution of charitable funds (Hamzah et al., 2024).

3.4 Adoption barriers and cross-market readiness

Across all three layers of the value chain, the literature identifies a recurring set of barriers that slow AI adoption regardless of the specific application. Azwar et al. (2025) note that the multidisciplinary character of the field, spanning computer science, jurisprudence, and financial regulation, means that few institutions have staff able to evaluate a proposed AI system on all three dimensions simultaneously, which in practice pushes many Islamic banks toward vendor-supplied solutions whose underlying logic is not fully transparent even to the purchasing institution. Iqbal et al. (2025) add a data quality dimension to this picture: much of the alternative data that AI credit scoring and financial inclusion applications rely on, such as mobile money transaction histories or utility payment records, is unevenly available across the Muslim-majority world, richer in markets such as Indonesia and Kenya where mobile money has matured over more than a decade, and thinner in markets, Somalia included, where digital financial infrastructure is more recent or more fragmented across competing mobile money operators. A further barrier is regulatory rather than technical: because Arsyad et al. (2025) find no jurisdiction in their four country comparison with AI-specific Islamic finance regulation, institutions that wish to move beyond pilot projects into full deployment currently do so without a clear compliance benchmark to design against, a gap that the RegTech and SupTech literature reviewed in Section 3.3 is only beginning to address. Taken together, these barriers suggest that the applications documented in Sections 3.1 to 3.3 are unevenly mature not because the underlying techniques differ in sophistication but because the surrounding institutional, data, and regulatory conditions differ sharply from one market to another, a point returned to in the discussion of Somalia in Section 6.

4. AI and Financial Inclusion in Developing and Muslim-Majority Economies

A second strand of the literature, larger than the Islamic-finance-specific strand, examines AI's relationship to financial inclusion in developing economies generally, a relationship of direct relevance given that a large share of the world's unbanked population lives in Muslim-majority states. Kshetri (2021) frames the problem in scale: roughly 1.7 billion adults globally lacked an account with a formal financial institution or mobile money provider as of the most recent Global Findex data cited in that review, with the unbanked population concentrated disproportionately in developing countries. Mhlanga (2020, 2021) argues, on the basis of conceptual and documentary analysis, that AI strengthens digital financial inclusion chiefly through improved risk detection and credit risk assessment using alternative data sources, addressing the information asymmetries that exclude the unbanked from formal credit.

More recent econometric work substantiates this relationship with cross-country data. Akram et al. (2025), analysing thirteen developing countries between 2017 and 2023 with a battery of panel estimators, find that AI significantly and robustly enhances financial inclusion across alternative specifications. Subramaniam et al. (2024) reach a similar conclusion using dynamic panel methods across twenty-nine countries stratified by AI adoption level. A more recent extension by the same authors complicates the picture: examining seventy-one low- and lower-middle-income countries, Subramaniam et al. (2026) find that AI readiness is positively associated with financial inclusion in lower-middle-income countries but negatively associated with it in low-income countries, a finding the authors attribute to the absence of the complementary infrastructure and skills needed for AI readiness to translate into actual access. This distinction matters directly for institutions operating in the poorest Muslim-majority economies, Somalia among them, where AI readiness on paper may not yet convert into inclusion in practice.

Other reviews add texture to the inclusion story rather than contesting it. Akanfe et al. (2025), scoping ninety-five information systems studies, argue that AI can address specific limitations that earlier waves of financial technology left unresolved, namely limited digital literacy, uneven and high-cost infrastructure, and weak personalisation, by adapting products to the circumstances of underserved segments rather than assuming a uniform customer. Adeoye et al. (2024) and Fazal et al. (2024) both connect AI-enabled inclusion to the United Nations Sustainable Development Goals, noting that financial inclusion is a stated enabler of eight of the seventeen SDGs. Marak et al. (2025), synthesising seventy studies through a PRISMA-guided systematic review, conclude that realising this potential requires an approach that pairs technological innovation with ethical safeguards and contextual understanding, a conclusion that anticipates the governance concerns examined in Section 5.

A more specific and, for this review, particularly relevant channel through which AI may extend financial inclusion in Muslim-majority economies is Islamic social finance. Hamzah et al. (2024) develop and evaluate a combined blockchain and AI model for zakat and waqf management in Malaysia, arguing that machine-learning-assisted verification of eligible recipients, combined with blockchain-based recording of collection and disbursement, can materially improve the transparency and auditability of charitable fund flows relative to the manual, trust-based administration that many zakat and waqf institutions still rely on. The proposed model uses AI principally for two tasks: screening recipient applications against eligibility criteria drawn from fiqh al-zakat, and flagging anomalous disbursement patterns for human review, functions that are conceptually close to the fraud detection and know-your-customer applications already established in commercial Islamic banking (Section 3.2) but applied instead to a charitable rather than a commercial transaction chain. For a country such as Somalia, where zakat and informal charitable giving remain a substantial part of household financial behaviour alongside formal and mobile money based finance, this line of work

suggests a second, largely unexplored channel, beyond commercial banking, through which AI could plausibly strengthen financial inclusion outcomes.

5. Shari'ah Governance, Ethics, and Regulatory Oversight

The governance literature converges on a single central concern, stated most directly by Arsyad et al. (2025): existing Islamic banking and insurance law was not written with AI in mind, and the resulting absence of a comprehensive legal framework leaves Shari'ah compliance to be assessed after the fact by supervisory boards that typically lack the technical training to audit an algorithm's decision logic. Comparing Indonesia, Hong Kong, Malaysia, and the United Arab Emirates, the same study finds that supervisory effectiveness depends heavily on whether Shari'ah board membership includes members with technological expertise, and proposes a supervisory model built on transparency, data security, regular auditing of AI systems, and integration of RegTech and SupTech into ongoing oversight rather than one-off approval.

Bibliometric mapping of the Scopus-indexed literature corroborates the centrality of this concern: Azwar et al. (2025) find that research on AI in Islamic finance is inherently multidisciplinary, spanning technical, ethical, legal, and Shari'ah compliance dimensions, with AI increasingly framed as a strategic enabler of maqasid al-shari'ah oriented services, that is, of the broader objectives of Islamic law, such as the protection of wealth and the promotion of public welfare, rather than of narrow legal compliance alone. Zulkepli et al. (2026) develop this framing furthest, proposing a maqasid-based evaluative framework in which AI is treated as a wasilah, or means, for realising the objectives of Shari'ah, and arguing that applications such as AI-driven credit scoring and robo-advisory services can support financial inclusion, equitable wealth distribution, and risk mitigation provided that privacy violations, data misuse, and opacity in algorithmic decision-making are actively managed rather than assumed away.

The generic algorithmic bias literature gives this governance concern empirical weight. Noreen et al. (2026) show, across the studies in their review, that bias in AI credit scoring is rarely a matter of an isolated technical defect; it typically enters through historically biased training data and is then compounded by proxy variables that correlate with protected characteristics even when those characteristics are formally excluded from the model, and by the profit-maximising objectives that most commercial scoring systems are built to optimise. Applied to an Islamic finance setting, this finding sharpens rather than diminishes the concern raised by Zulkepli et al. (2026): a credit scoring or Takaful underwriting model that reproduces historical lending patterns from a market where access to formal, Shari'ah-compliant finance has itself been historically uneven, for instance across rural and urban populations, or between customers with and without prior banking history, risks encoding exactly the kind of unfairness that maqasid al-shari'ah principles are meant to guard against, even where every individual transaction the model approves is nominally free of riba and gharar. Noreen et al. (2026) further note that technical mitigation strategies such as fairness-constrained model training and post hoc auditing show promise but are not sufficient on their own, and that effective governance requires technical standards and institutional accountability mechanisms operating together, a conclusion that converges closely with the supervisory model proposed by Arsyad et al. (2025) for Islamic financial institutions specifically.

Iqbal et al. (2025) situate these ethical concerns within a wider bibliometric pattern: research activity clusters strongly around Pakistan, Malaysia, Turkey, Saudi Arabia, Indonesia, Qatar, Iran, and the United Arab Emirates, a geography that leaves sub-Saharan African Islamic finance markets, including Somalia's, largely outside the evidence base even though the governance questions those markets face, including the algorithmic bias risks just discussed, are the same ones the literature is trying to answer.

Figure 1

AI application domains and Shari'ah governance safeguards in Islamic financial institutions

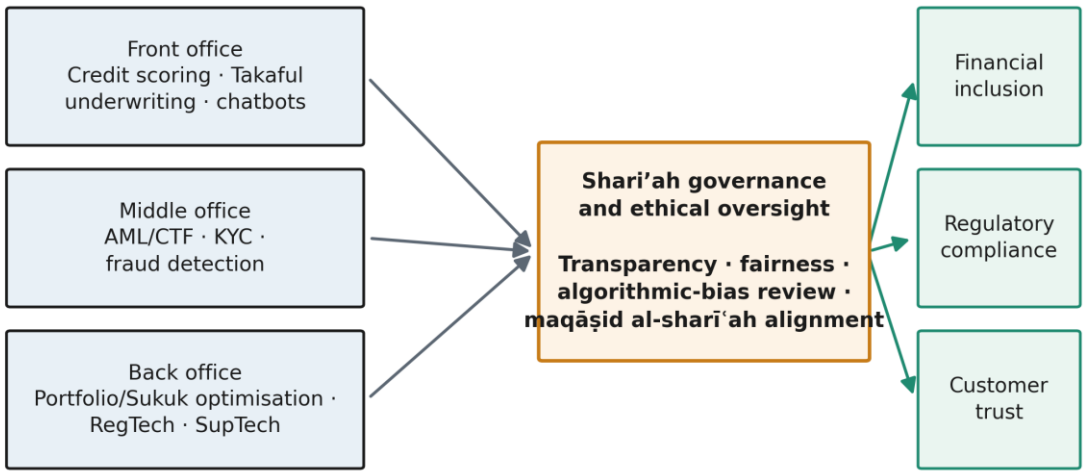


Figure 1. AI application domains and Shari'ah governance safeguards in Islamic financial institutions. Arrows indicate that AI applications across the front, middle, and back office are routed through Shari'ah governance and ethical oversight before they are permitted to generate financial inclusion, compliance, and trust outcomes.

Table 1 summarises twelve of the twenty-two studies reviewed, selected to represent the four thematic strands, applications, financial inclusion, Islamic social finance, and governance, discussed above.

Study	Context / Scope	Focus	Key Contribution
Arsyad et al., 2025	Indonesia, Hong Kong, Malaysia, UAE (comparative legal analysis)	AI oversight across the Islamic finance value chain	Identifies the absence of a comprehensive legal framework for AI in Islamic finance and proposes a supervisory model
Azwar et al., 2025	Global (Scopus, PRISMA protocol)	Bibliometric mapping	Confirms sharp post-2020 growth in AI-Islamic finance scholarship; research is multidisciplinary and Shari'ah-compliance-oriented
Iqbal et al., 2025	Global, 2010-2023 (Scopus/Web of Science)	Bibliometric and ethical analysis	AI enhances compliance automation and inclusion; research concentrated in Pakistan, Malaysia, Indonesia, and the GCC

Zulkepli et al., 2026	Conceptual / qualitative (library, interpretive analysis)	Maqasid al-Shari'ah framework	Proposes a maqasid-based evaluative framework for AI governance in Islamic finance
Khan et al., 2021	Applied / technical design	NLP-based chatbot	First proposed AI/NLP chatbot for real-time Shari'ah-compliant financial advice
Dey, 2025a	Conceptual	ML applications across Islamic finance functions	Maps supervised, unsupervised, and NLP techniques onto credit scoring, fraud detection, and compliance
Kshetri, 2021	Developing countries (World Bank Global Findex)	Financial inclusion	Frames AI as a lever against a global unbanked population estimated at 1.7 billion adults
Mhlanga, 2020	Conceptual / documentary analysis	Digital financial inclusion	AI strengthens risk detection, customer support, and fraud/cyber-security relevant to inclusion
Akram et al., 2025	13 developing countries, 2017-2023 (panel data)	Econometric analysis	AI significantly and robustly enhances financial inclusion across alternative estimators
Subramaniam et al., 2026	71 low- and lower-middle-income countries (dynamic panel GMM)	Econometric analysis	AI readiness aids inclusion in lower-middle-income countries but is negatively associated with it in low-income countries
Hamzah et al., 2024	Malaysia (applied design study)	Blockchain-AI zakat and waqf management	Proposes a combined blockchain and AI model to improve transparency and eligibility screening in Islamic social finance
Noreen et al., 2026	Global (systematic review, 15 of 55 studies, 2018-2025)	Algorithmic bias in AI credit scoring	Bias originates chiefly from historical training data, amplified by proxy variables and profit-driven objectives

6. Discussion: Implications for Somalia and the Horn of Africa

None of the studies reviewed here examines an Islamic financial institution operating in Somalia or, more broadly, in the Horn of Africa, which is itself an informative gap. Somalia's financial system is almost entirely Shari'ah based and is also among the most mobile-money-dependent in the world, a combination that makes it an unusually clear test case for the inclusion arguments reviewed in Section 4. If AI-enabled credit scoring and risk assessment

genuinely widen access for populations excluded from conventional collateral-based lending, as Mhlanga (2021) and Akram et al. (2025) argue on evidence from other developing economies, Somali Islamic banks and mobile-money-linked financial services are a plausible setting in which that effect should be visible. The Subramaniam et al. (2026) finding that AI readiness alone does not guarantee inclusion in low-income countries is a caution against assuming the effect will appear automatically; it points instead to the complementary infrastructure, data availability, and human capital investments that the financial inclusion literature more broadly identifies as preconditions (Akanfe et al., 2025).

The Hamzah et al. (2024) zakat and waqf model is, in this respect, a particularly concrete opening for Somali institutions. Somalia already has an extensive informal charitable giving infrastructure, much of it channelled through mosques, diaspora remittance networks, and community-based waqf arrangements, that operates largely without the digital recordkeeping the Malaysian model assumes. Piloting a lighter-weight version of that model, focused first on transparent recordkeeping rather than full blockchain infrastructure, could plausibly generate demonstrable trust gains for donors and recipients alike, and would sit naturally alongside Somalia's existing strength in mobile money infrastructure, discussed further in the companion review of AI governance in the telecommunications sector.

On governance, the Arsyad et al. (2025) finding that supervisory effectiveness depends on Shari'ah board members holding technological expertise is directly actionable for institutions and regulators in Somalia, where Shari'ah supervisory capacity and data science capacity have historically developed along separate tracks. The Noreen et al. (2026) evidence on how algorithmic bias enters credit models through historical training data is a further reason for caution: any Somali institution adopting AI credit scoring should expect that data drawn from a market with historically uneven access to formal finance will carry those same patterns forward unless the model is explicitly audited for it, a concern Somali Shari'ah boards are not yet resourced to evaluate on current evidence. Universities with active Islamic banking and finance programmes are well placed to close that gap by training graduates who can sit on such boards with both qualifications, and by producing the empirical, locally grounded research on AI adoption in Somali Islamic finance that the current literature, concentrated as it is in South and Southeast Asia and the Gulf, does not yet provide (Iqbal et al., 2025).

6.1 Practical recommendations for Somali Islamic financial institutions

Three practical steps follow from the evidence reviewed above, each pitched at the level of specificity that a Somali Islamic bank, mobile money operator, or regulator could plausibly act on in the near term. First, before adopting any AI credit scoring or Takaful underwriting tool, institutions should commission an independent bias audit of the kind implied by Noreen et al. (2026), examining whether the training data reflects historical patterns of exclusion by geography, gender, or banking history, and whether proxy variables correlated with these characteristics have been identified and addressed. Second, Shari'ah supervisory boards should be given explicit authority, and corresponding technical training, to review not only the outputs of an AI system but the design choices behind it, following the model Arsyad et al. (2025) associate with more effective supervision in Malaysia and the UAE; this is a governance investment that can be made incrementally, starting with board member training programmes before a full technical audit function is built. Third, given the concrete transparency and auditability gains reported by Hamzah et al. (2024) for a blockchain and AI-enabled zakat and waqf model, Somali charitable and religious institutions managing zakat collection could pilot a simplified digital recordkeeping system, focused initially on donor-facing transparency rather than full automation of eligibility screening, as a lower-risk entry point into AI-enabled Islamic social finance than commercial credit scoring would represent.

7. Limitations and Future Research Directions

This review has three limitations worth stating plainly. First, it is a narrative rather than a fully registered systematic review; while the search strategy was applied consistently, it was not designed to be exhaustive in the way a PRISMA-registered protocol with multiple independent databases and dual-reviewer screening would be, and some relevant studies, particularly in languages other than English, will not have been captured, a limitation the underlying bibliometric studies themselves note (see Iqbal et al., 2025). Second, the evidence base it draws on is heavily weighted toward conceptual, legal-analytical, and bibliometric work; empirical, firm-level evidence of AI's effect on Islamic bank performance, customer outcomes, or Shari'ah compliance incidents remains scarce relative to the equivalent literature on conventional banking. Third, the algorithmic bias evidence introduced in Section 5 is drawn from studies of conventional, not Islamic, credit scoring; while the underlying mechanisms, biased training data, proxy variables, and profit-driven objectives, are general enough to transfer by analogy, no study reviewed here tests directly whether Islamic-finance-specific screening criteria, such as Shari'ah compliance filters, mitigate or compound these bias mechanisms.

Four directions follow. First, the cross-jurisdictional legal comparison undertaken by Arsyad et al. (2025) for Indonesia, Hong Kong, Malaysia, and the UAE should be extended to sub-Saharan African and Horn of Africa jurisdictions, where Islamic banking regulation is comparatively young and where AI-specific provisions are, on current evidence, entirely absent. Second, the financial inclusion econometrics reviewed in Section 4 should be disaggregated to isolate Islamic-finance-specific channels, namely Takaful uptake, Sukuk access, murabaha based lending, and zakat or waqf digital administration, rather than treating financial inclusion as a single undifferentiated outcome. Third, given the maqasid-based governance frameworks proposed by Zulkepli et al. (2026) and others, empirical work is needed on how Shari'ah boards in practice audit AI systems today, what technical capacity they currently have, and what training would close the gap identified across this literature. Fourth, and following directly from the discussion in Section 5, future work should test empirically whether the algorithmic bias mechanisms documented by Noreen et al. (2026) for conventional credit scoring operate similarly, more severely, or differently once Shari'ah compliance screening is layered on top of a standard scoring pipeline, a question with direct practical stakes for any Islamic financial institution considering AI adoption in a historically underbanked market such as Somalia's.

8. Conclusion

The literature on AI in Islamic finance is young but converging on a consistent set of findings: AI is already active across the front, middle, and back office of Islamic financial institutions, and is beginning to extend into Islamic social finance functions such as zakat and waqf administration; cross-country evidence links AI adoption to gains in financial inclusion, though the relationship depends on complementary infrastructure and is not guaranteed in the lowest income settings; and the central unresolved problem is governance, specifically, the absence of legal frameworks and Shari'ah board technical capacity adequate to audit algorithmic decisions for transparency, fairness, and alignment with the broader objectives of Islamic law. The wider evidence on algorithmic bias in conventional credit scoring makes this governance problem more urgent rather than less, since the same mechanisms that produce biased outcomes in conventional finance are, on current evidence, equally capable of operating inside a nominally Shari'ah-compliant model. For Islamic financial institutions and universities in Somalia and the wider Horn of Africa, a region entirely absent from the current evidence base despite being a natural test case for its central claims, the task ahead is not to wait for that evidence to arrive from elsewhere but to generate it locally, in institutions and markets the existing literature has not yet reached.

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Ethics and Consent
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Data and Source Availability
All sources synthesised in this review are peer-reviewed publications and are listed in the reference list. No new primary data were generated.

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