

ARTIFICIAL INTELLIGENCE IN ISLAMIC FINANCIAL INSTITUTIONS: TOWARDS ENHANCED SHARIA COMPLIANCE.

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Abstract

Artificial Intelligence (AI) is increasingly positioned as a transformative enabler of Sharia compliance in Islamic Financial Institutions (IFIs), promising real-time monitoring, improved auditing accuracy, and richer decision-support capabilities. Yet its adoption raises substantive ethical, governance, and interpretive challenges that remain underexplored in the literature. This study addresses that gap through a systematic literature review (SLR) of 47 peer-reviewed publications and regulatory documents (2016–2024), retrieved from Scopus, Web of Science, ScienceDirect, Emerald Insight, and EBSCO. The review applies a five-theme coding framework, validated through independent dual-coding with substantial inter-coder agreement (Cohen's $\kappa = 0.84$). Findings are interpreted through an integrated theoretical lens combining the higher objectives of Islamic law (Maqasid al-Shariah) with the Technology-Organization-Environment (TOE) framework, anchoring the analysis in both Islamic ethics and established adoption theory. A comparative case analysis of four pioneering IFIs (Wahed Invest, Dubai Islamic Bank, CIMB Islamic Bank, and Emirates Islamic Bank) illustrates how strengths and weaknesses materialise in practice. A SWOT synthesis distils strategic implications. The study contributes a principle-based conceptual model linking Explainable AI (XAI), Sharia-centric data governance, and human-in-the-loop oversight to the Islamic objectives of preservation of wealth, justice, and public welfare. The principal contribution is to move the AI–Sharia debate from generic claims toward a testable, ethically grounded framework that can guide regulators, IFI boards, and Sharia Supervisory Boards.

Keywords: Artificial Intelligence; Sharia Compliance; Islamic Finance; Maqasid al-Shariah; Explainable AI; Ethical Governance; FinTech

1. INTRODUCTION

Artificial Intelligence (AI) is fundamentally reshaping the global financial industry by enhancing risk management, operational efficiency, and strategic decision-making (Berg et al., 2020). Its diffusion into Islamic finance, however, presents a distinctive set of challenges: AI applications must align not only with conventional prudential regulation but also with the foundational ethical and legal principles of Sharia law. While AI in conventional finance is comparatively well-documented, the intersection of AI with Sharia compliance has received markedly less scholarly attention, and the literature that does exist tends to remain descriptive rather than analytical (Rahman & Ali, 2024; Hashem, 2023).

The stakes of this lacuna are practical, not merely academic. The Islamic finance sector is projected to grow from approximately USD 4.5 trillion to USD 6.67 trillion by 2027 (Hasan & Mohamed, 2024). As IFIs scale, manual Sharia compliance verification becomes increasingly infeasible, and AI-driven automation becomes a near-necessity rather than a strategic option. Yet the very features that make AI attractive speed, scale, statistical inference, also generate risks that strike at the core of Islamic financial ethics: algorithmic opacity conflicts with the Islamic principle of transparency, training-data biases conflict with the principle of justice, and the displacement of scholarly judgment by automated decision-making conflicts with the role of the Sharia Supervisory Board (SSB) as the locus of religious authority (Karim & Hassan, 2019; Foster & Rhoden, 2020).

Three observations frame the present study. First, although the literature has begun to document individual AI applications in IFIs, it lacks a coherent theoretical scaffolding that links technological characteristics to Sharia-specific normative criteria. Second, the methodological foundations of existing reviews are often unclear, with few studies reporting their search strategies, source counts, or coding procedures, making cumulative knowledge-building difficult. Third, illustrative cases (Wahed Invest, Dubai Islamic Bank, and others) are frequently mentioned but rarely compared systematically against a common analytical grid.

This study responds to these three gaps. It is guided by two research questions:

- **RQ1:** How can AI be integrated into the operational and compliance frameworks of IFIs in a way that ensures and enhances Sharia adherence?
- **RQ2:** What are the principal benefits, constraints, and theoretical implications of this integration when evaluated through the joint lens of Maqasid al-Shariah and the Technology-Organization-Environment (TOE) framework?

To answer these questions, the paper proceeds as follows. Section 2 develops the literature review and theoretical framework, integrating Maqasid al-Shariah with TOE to produce a hybrid evaluative lens. Section 3 sets out a transparent, PRISMA-informed methodology, including search strategy, databases, inclusion criteria, source counts, and dual-coder validation. Section 4 presents the findings, organised around a comparative case analysis of four IFIs and a SWOT synthesis. Section 5 concludes with theoretical contributions, practical implications, limitations, and future research directions.

1. LITERATURE REVIEW AND THEORETICAL FRAMEWORK

1.1 CONCEPTUALIZATION OF AI IN SHARIA COMPLIANCE

AI denotes a class of computational systems designed to emulate cognitive functions such as inference, pattern recognition, and decision-making (Rahman & Ali, 2024). In finance, AI is operationalized primarily through machine learning, predictive analytics, natural language processing (NLP), and robotic process automation, with documented applications in fraud detection, anti-money-laundering screening, credit scoring, and customer due diligence (Foster & Rhoden, 2020; Rani et al., 2023). Islamic finance, by contrast, is a normative paradigm: its products and processes derive their legitimacy from compliance with Sharia, particularly the prohibitions of interest, excessive uncertainty, and gambling, together with positive obligations of risk-sharing, asset-backing, and social responsibility (Ashraf, 2023; Al-Okaily & Alsmadi, 2024).

The convergence of these two domains is not, however, mechanical. AI is value-neutral at the level of code but value-laden at the level of training data, objective functions, and deployment context. Two analytical tensions emerge from the literature. First, there is a tension between procedural and substantive compliance: AI may correctly flag a contract clause as containing interest (procedural compliance) yet fail to capture the underlying ethical purpose of the prohibition (substantive compliance with Maqasid). Malik and Khan (2023) treat this as a technical problem solvable by better training data, whereas Karim and Hassan (2019) treat it as a structural limitation of formal computation. The present review takes the latter position: substantive Sharia compliance requires interpretive judgment that current AI cannot autonomously produce, and the framing of AI as autonomous compliance auditor risks a category error.

Second, there is a tension between scalability and contextual nuance. NLP applications to fatwa databases (Saad, 2024) demonstrate impressive coverage, but Sharia rulings are jurisdiction-, school-, and case-specific. A model trained predominantly on Gulf Cooperation Council jurisprudence may misclassify Southeast Asian or Maghreb practice. The literature largely ignores this geographic and doctrinal heterogeneity, treating Sharia as a monolithic input.

1.2 INTEGRATION OF AI INTO FINANCIAL AND COMPLIANCE FRAMEWORKS

AI's penetration of IFI operations has accelerated across four functional areas: auditing, risk management, investment screening, and customer interaction (Agarwal et al., 2023; Suzuki & Dulal Miah, 2022; Altaf et al., 2022). In auditing, AI tools automate the verification of relevance and timeliness criteria, with Robotic Process Automation (RPA) handling repetitive anomaly-detection tasks for human review (Dotel, 2020; Azhar & Hassan, 2024; Hashem, 2023). In risk management, AI contributes to credit assessment, operational-risk mitigation, and forecasting (Mer et al., 2024; Khafaga, 2024). In investment screening, AI assists in evaluating the Sharia-compliance status of portfolios against AAOIFI and IFSB standards (Al-Shalhoob, 2023). In customer interaction, conversational AI guides retail clients toward compliant products (Osei-Assibey Bonsu et al., 2023).

The literature divides sharply on the implications of this integration. Proponents (Karim & Hassan, 2019; Zain & Habib, 2018; Saad, 2024) emphasize efficiency gains, faster breach detection, lower audit cost, broader product innovation. Critics (Foster & Rhoden, 2020; Rahman, 2021) emphasize three structural concerns: the inability of formal systems to capture scholarly judgment-based interpretation; the erosion of religious authority through delegation to opaque models; and the digital divide between large and small IFIs created by the capital intensity of AI infrastructure.

Lehner et al. (2022) propose a synthesis: AI as an augmentation tool rather than an autonomous decision-maker, with human scholars retaining final authority on doctrinally complex judgments. This position, which the present study endorses and extends, reframes the question from "can AI replace Sharia scholars?" to "how should the division of cognitive labour between AI and SSBs be designed?" The latter question is more tractable empirically and more consistent with the deliberative character of Islamic jurisprudence.

A pragmatic approach positions AI not as an autonomous decision-maker but as a tool to augment human expertise. In this model, AI handles data analysis and process automation,

creating a paperless workflow, while human scholars and practitioners retain final authority on complex judgments (Lehner, 2022). This symbiotic relationship merges the efficiency of AI with indispensable human wisdom, promising to enhance operational efficiency while reinforcing adherence to core Sharia principles (Lehner, 2022; Arora & Sharma, 2023).

1.3 ETHICAL CONSIDERATIONS

Four ethical considerations recur in the literature with distinctive Islamic inflection. Transparency and accountability go beyond the conventional "right to explanation": Sharia requires clarity in contractual dealings such that excessive uncertainty is minimised, which translates into a strong normative case for Explainable AI (XAI) in IFI contexts (Virdhagrishwaran & Kumar, 2022; Johnsson & Persson, 2021; Rahman, 2021). Algorithmic bias is similarly inflected: under the Islamic principle of justice, the perpetuation of historical discrimination through training data is not merely a fairness problem but a violation of a religious obligation, raising the bar for pre-deployment bias auditing (Karim & Hassan, 2019).

Data privacy is governed by the broader Sharia principle of safeguarding human dignity and confidentiality, which imposes stricter constraints than conventional consent frameworks (Abdullah & Chee, 2020; Zain & Habib, 2018). Finally, the deployment of AI must be evaluated against the social-welfare objective embedded in Maqasid al-Shariah: profit maximisation alone is an insufficient justification (Iqbal & Mirakhor, 2017; Hashem, 2023). The literature mentions these principles but rarely operationalises them, producing what might be called "ethical decoration" rather than ethical architecture. Section 2.4 addresses this by deriving operational criteria from a structured theoretical framework.

1.4 THEORETICAL FRAMEWORK: MAQASID AL-SHARIAH MEETS TOE

Existing reviews of AI in Islamic finance suffer from a recognised weakness: they invoke Islamic principles in general terms without anchoring them in either a normative typology or an established adoption theory. This study addresses that weakness by combining two complementary frameworks.

1.4.1 MAQASID AL-SHARIAH AS A NORMATIVE LENS

Following the classical formulation of al-Ghazali and al-Shatibi, and its modern operationalisation by Auda (2008) and Chapra (2008), Maqasid al-Shariah identifies five higher

objectives of Islamic law: preservation of religion, life, intellect, lineage, and wealth. For the present study, three of these objectives are directly engaged by AI applications:

- **Preservation of wealth:** AI's contribution to fraud detection, anti-money-laundering, and risk forecasting serves this objective directly.
- **Preservation of intellect:** the role of AI in supporting, rather than displacing, Sharia scholars' interpretive work bears on this objective.
- **Public welfare:** the distributive question of whether AI democratizes or concentrates access to compliant finance falls under this objective.

Two cross-cutting principles, justice and transparency, operate as constraints on all three. Together, these five concepts form the normative evaluative grid applied in Section 4.

1.4.2 THE TOE FRAMEWORK AS AN ADOPTION LENS

Maqasid provides the "why" of evaluation but not the "how" of adoption. For the latter, this study draws on the Technology-Organization-Environment framework originally proposed by Tornatzky and Fleischer (1990) and subsequently refined for FinTech adoption contexts (Baker, 2012; Oliveira & Martins, 2011). TOE identifies three contextual dimensions that jointly shape technological adoption:

- **Technology context:** characteristics of the AI artefact itself accuracy, explainability, data requirements, integration cost, compatibility with legacy systems.
- **Organization context:** internal capabilities of the IFI scale, technical expertise, leadership commitment, the maturity of internal Sharia governance, and the composition of the Sharia Supervisory Board.
- **Environment context:** external pressures and enablers regulatory frameworks from AAOIFI and IFSB, jurisdictional Sharia interpretation, competitive intensity, and supply-side maturity of Sharia-specific AI vendors.

1.4.3 AN INTEGRATED MAQASID-TOE FRAMEWORK

Used in isolation, Maqasid risks becoming purely aspirational, while TOE risks becoming ethically agnostic. Their integration is mutually corrective. The integrated framework treats TOE as a positive descriptor of adoption conditions and Maqasid as the normative test those conditions must pass. Concretely, every AI deployment decision in an IFI is evaluated along a 3×5 matrix: TOE dimensions (technology / organization / environment) crossed with Maqasid

criteria (preservation of wealth / preservation of intellect / public welfare / justice / transparency). Section 4 applies this matrix to the comparative case analysis.

1.5 RESEARCH GAP AND CONCEPTUAL MODEL

The preceding review identifies three converging gaps in the literature. (i) Theoretical: existing work invokes Islamic principles without an integrated framework that operationalises them alongside an established adoption theory. (ii) Methodological: the few systematic reviews on the topic rarely report search strategies, source counts, or coding validation, limiting cumulative knowledge-building. (iii) Empirical-comparative: pioneering IFI cases are mentioned in passing but seldom compared along common analytical dimensions.

This study addresses all three. Theoretically, it proposes the Maqasid-TOE integrated framework. Methodologically, it adopts a transparent PRISMA-informed protocol with dual-coder validation. Empirically, it offers a comparative case analysis of four pioneering IFIs along common dimensions. The resulting conceptual model treats AI as a Sharia-compliance enabler only when three conditions are simultaneously met: (1) the technology is explainable and bias-audited (technology × transparency × justice); (2) the organization preserves human SSB authority over interpretive decisions (organization × preservation of intellect); and (3) the environment provides Sharia-specific datasets, regulatory clarity, and equitable access (environment × public welfare).

2. METHODOLOGY

This study employs a Systematic Literature Review (SLR) with qualitative thematic content analysis. The SLR protocol is informed by the PRISMA 2020 guidelines (Page et al., 2021) and the systematic-review methodology articulated by Tranfield, Denyer, and Smart (2003). Thematic coding follows Braun and Clarke's (2006) six-phase approach. The methodology is reported in sufficient detail to support replication.

2.1 RESEARCH DESIGN

An SLR design was selected because the research questions are integrative and theory-building rather than hypothesis-testing. The unit of analysis is the published study (or authoritative regulatory document) addressing AI applications in IFIs. The review is interpretive: its goal is to identify, synthesise, and critically evaluate the body of evidence, not to estimate effect sizes. Accordingly, qualitative thematic analysis—rather than meta-analysis—is the analytical method.

2.2 SEARCH STRATEGY AND DATABASES

The literature search was conducted between November 2024 and February 2025. Five databases were queried, selected for their coverage of management, finance, and information-systems literature, and their representation of Islamic finance scholarship:

- Scopus (Elsevier)
- Web of Science (Clarivate)
- ScienceDirect
- Emerald Insight
- EBSCO Business Source Complete

Google Scholar and SSRN were used as supplementary sources for grey literature and working papers, and the websites of AAOIFI, IFSB, the IMF, and the World Bank were searched manually for regulatory and industry reports.

The Boolean search string applied to titles, abstracts, and keywords was:

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("artificial intelligence" OR "machine learning" OR "deep learning" OR "natural language processing" OR "AI") AND ("Islamic finance" OR "Islamic bank*" OR "Sharia compliance" OR "Shariah compliance" OR "Islamic financial institution*" OR "sukuk" OR "takaful")
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2.3 INCLUSION AND EXCLUSION CRITERIA

To balance comprehensiveness with relevance, the following criteria were applied:

Inclusion criteria:

- Peer-reviewed journal articles or conference papers published between January 2016 and December 2024.
- Studies in English or Arabic with English abstracts.
- Direct substantive engagement with AI (or a named AI technique) and Islamic finance / Sharia compliance.
- Authoritative regulatory or industry reports issued by AAOIFI, IFSB, the IMF, the World Bank, or central banks of OIC member states.

Exclusion criteria:

- Non-peer-reviewed sources (except the authoritative bodies listed above).
- Studies addressing AI in conventional finance only, without comparison or transfer to Islamic finance.
- Studies addressing Islamic finance only, without substantive AI content.
- Editorials, book reviews, and commentaries without original argument or evidence.
- Duplicates and pre-prints superseded by published versions.

2.4 PRISMA FLOW AND FINAL CORPUS

The initial database query returned 312 records. After removal of 78 duplicates, 234 unique records proceeded to title screening. Title screening excluded 142 records as off-topic, leaving 92 records for abstract review. Abstract screening excluded a further 31 records, leaving 61 records for full-text assessment. Full-text screening excluded 21 records (8 for insufficient AI content, 7 for insufficient Sharia content, 4 for being editorials or commentaries, and 2 for inaccessibility), yielding 40 peer-reviewed records. Seven additional authoritative documents (3 AAOIFI standards, 2 IFSB working papers, 1 IMF working paper, and 1 World Bank report) were added through manual search of institutional websites, producing a final corpus of 47 sources for thematic coding. Table 1 summarises the PRISMA flow.

Table 1. PRISMA flow of source identification and screening.

Stage	Included	Excluded
Records identified through database search	312	—
After duplicate removal	234	78
After title screening	92	142
After abstract screening	61	31
After full-text assessment	40	21
Authoritative regulatory documents (manual search)	+7	—
Final corpus for thematic coding	47	—

Source: Author's elaboration based on PRISMA 2020 (Page et al., 2021).

2.5 THEMATIC CODING FRAMEWORK

A five-theme coding framework was developed deductively from the literature review and refined inductively during the familiarisation phase. The themes are:

- **Theme 1 — AI in Sharia Compliance:** AI tools applied to detect prohibited elements (interest, excessive uncertainty, gambling) in contracts and transactions.
- **Theme 2 — AI for Risk and Fraud Detection:** applications of AI to fraud detection, anti-money-laundering, and operational-risk monitoring.
- **Theme 3 — AI-Based Decision Support:** predictive analytics, NLP, and decision-support tools applied to investment screening and product design.
- **Theme 4 — Ethical Considerations:** algorithmic bias, transparency, data privacy, and the erosion of human scholarly judgment.
- **Theme 5 — Regulatory and Institutional Challenges:** AAOIFI/IFSB standards, jurisdictional variation, resource asymmetries, and capacity gaps.

2.6 CODING VALIDATION AND INTER-CODER RELIABILITY

To address concerns about coding subjectivity, the analysis was validated through an independent dual-coding procedure following the protocol of O'Connor and Joffe (2020). The primary author and a second coder (a doctoral researcher in Islamic finance, blinded to the primary author's coding) independently coded a random sample of 15 sources (32% of the corpus) against the five-theme framework. Each text segment could be assigned to one or more themes.

Inter-coder reliability was assessed using Cohen's kappa (κ). Across the five themes, the average $\kappa = 0.84$ (range: 0.78 for "Ethical Considerations", the most interpretively complex theme, to 0.91 for "AI for Risk and Fraud Detection"), indicating substantial to near-perfect agreement (Landis & Koch, 1977). Disagreements were resolved through discussion. The remaining 32 sources were coded by the primary author using the validated framework. Quoted illustrative segments and the coding manual are available from the author on request.

2.7 ANALYTICAL FRAMEWORK: SWOT SYNTHESIS

Following thematic coding, findings were synthesized into a SWOT (Strengths, Weaknesses, Opportunities, Threats) framework. SWOT was selected because it distinguishes internal factors (S/W) from external environmental factors (O/T), which maps directly onto the organization-context and environment-context dimensions of TOE, thereby preserving theoretical consistency between methodology and framework. The SWOT synthesis is presented in Section 4.4.

2.8 METHODOLOGICAL LIMITATIONS

Three limitations should be acknowledged. First, language restriction to English and Arabic excludes potentially relevant work in Bahasa Malaysia, Urdu, Turkish, and French. Second, the 2016–2024 window excludes earlier foundational work, although a pilot search confirmed that pre-2016 publications on AI specifically in IFIs are sparse. Third, as a literature-based study, the analysis is mediated by the empirical quality of the underlying sources; the comparative case analysis in Section 4.1 partially mitigates this by triangulating across primary institutional disclosures.

3. RESULTS AND DISCUSSION

3.1 COMPARATIVE CASE ANALYSIS OF AI IMPLEMENTATIONS IN LEADING IFIS

Four institutions are analyzed as illustrative cases of AI deployment in Islamic finance: Wahed Invest (United States/global), Dubai Islamic Bank (United Arab Emirates), CIMB Islamic Bank (Malaysia), and Emirates Islamic Bank (United Arab Emirates). Cases were selected because they (i) deploy AI in production rather than as pilots; (ii) span both retail FinTech and conventional IFI archetypes; and (iii) operate across three jurisdictions, allowing limited geographic triangulation. Information is drawn from peer-reviewed studies, regulatory disclosures, and institutional reports. Table 2 summarizes the comparison.

Table 2. Comparative case analysis of AI deployments in leading IFIs.

Institution	Primary AI tools	Compliance function served	Maqasid emphasis	Key TOE-derived limitation
Wahed Invest (US / global)	Machine learning for portfolio optimisation; rule-based Sharia screening.	Retail robo-advisory aligned with AAOIFI standards.	Preservation of wealth; public welfare (democratised access).	Technology: limited explainability of optimisation outputs to retail users.
Dubai Islamic Bank (UAE)	Transaction-screening AI; anomaly detection.	Real-time screening for interest and excessive uncertainty in transactions.	Preservation of wealth; justice.	Organisation: integration with legacy core-banking systems.
CIMB Islamic Bank (Malaysia)	Real-time Sharia-violation monitoring; predictive analytics.	Continuous compliance monitoring; ethical investment screening.	Transparency; justice.	Environment: jurisdictional variation between Malaysian and GCC interpretive standards.
Emirates Islamic Bank (UAE)	AI + blockchain for sukuk issuance.	Transparency and contractual integrity of sukuk lifecycle.	Transparency; preservation of wealth.	Technology / environment: maturity of integrated AI-blockchain Sharia vendors.

Source: Author's synthesis based on Walton (2024), Mansoori & Sadeghi (2023), Osei-Assibey Bonsu et al. (2023), Zafar & Khalid (2024), and institutional disclosures.

Read across the cases, three patterns emerge. First, retail-facing institutions (Wahed Invest) tend to emphasize public welfare-oriented democratization, while wholesale-facing institutions (Emirates Islamic) emphasize transparency in contractual processes. Second, the limitations cluster differently along TOE dimensions: technology limitations dominate the retail case (explainability to non-expert users), organization limitations dominate the legacy-bank cases (Dubai Islamic, integration), and environment limitations dominate the cross-jurisdictional case (CIMB Islamic). Third, no institution in the sample reports a fully integrated XAI architecture

with documented bias-auditing, suggesting that the gap between aspirational ethical AI and deployed AI is wide even among pioneers.

3.2 THEMATIC FINDING

3.2.1 COMPLIANCE AND ACCOUNTABILITY

Across the 47 sources, AI-enabled compliance monitoring is the most-discussed application (coded in 34 sources, 72%). The dominant claim is that AI provides continuous, real-time monitoring that significantly reduces the human error and labour intensity of traditional periodic audits (Walton, 2024). Critically evaluated, however, only 9 sources (19%) report measured accuracy gains over manual processes, and 4 of those 9 are vendor-authored. The evidence base for compliance-accuracy gains is thinner than the discourse suggests, a gap future empirical research should close.

3.2.2 ADVANCED ANALYTICS AND DECISION SUPPORT

Predictive analytics for risk assessment (28 sources, 60%) and NLP for fatwa and contract analysis (19 sources, 40%) emerge as the second-most-developed application area. Saad (2024) and Malik and Khan (2023) report NLP applications that convert fatwas into machine-readable compliance rules. The principal unresolved question, rarely addressed in the literature, is doctrinal heterogeneity across schools of jurisprudence and jurisdictions: a fatwa-trained model is only as ecumenical as its training corpus, and the literature provides no systematic treatment of how multi-school of jurisprudence coverage should be engineered.

3.2.3 FRAUD DETECTION

Fraud detection (24 sources, 51%) is the area in which the conventional-finance AI literature transfers most directly to IFIs, and where the marginal contribution of Sharia-specific considerations is smallest (Giacalone et al., 2022). The principal Sharia-specific concern in this area is data privacy: aggressive anomaly detection may conflict with confidentiality obligations to safeguard client confidentiality.

3.2.4 OPERATIONAL EXPANSION

Chatbots and customer-facing AI (16 sources, 34%) appear in retail contexts. The AI-blockchain synergy for sukuk issuance (11 sources, 23%) is a frontier application: Zafar and Khalid (2024) document Emirates Islamic Bank's integration, but the literature on AI-blockchain hybrids in Islamic finance remains exploratory.

3.2.5 ETHICAL AND GOVERNANCE FINDINGS

The ethical theme (coded in 39 sources, 83%) is paradoxically the most-discussed and least-operationalized. Sources routinely invoke transparency, fairness, and privacy without specifying how these principles translate into technical or governance requirements. Eight sources (17%) discuss XAI explicitly; only three propose concrete architectures. This finding directly motivates the conceptual contribution of the present study: moving from ethical decoration to ethical architecture.

3.3 SWOT SYNTHESIS

Table 3 synthesizes the findings into a SWOT framework. Strengths and weaknesses are internal to the IFI / AI artefact (mapping to TOE's technology and organization contexts). Opportunities and threats are external (mapping to TOE's environment context).

Table 3. SWOT analysis of AI integration in Sharia-compliant finance.

<p>Strengths (Internal)</p> <ul style="list-style-type: none"> • Real-time, continuous monitoring of Sharia compliance, reducing manual workload and human error. • Superior fraud detection and AML capabilities through pattern recognition at scale. • Advanced decision support for portfolio screening against AAOIFI/IFSB standards. • Operational efficiency gains and reduction in audit cost. 	<p>Weaknesses (Internal)</p> <ul style="list-style-type: none"> • Scarcity of high-quality, Sharia-specific training datasets. • The "black box" problem: opacity of complex models conflicts with transparency. • High capital and capability requirements concentrate adoption among large IFIs. • Risk of algorithmic bias contradicting the justice principle.
<p>Opportunities (External)</p> <ul style="list-style-type: none"> • AI-enabled product innovation expanding the Sharia-compliant offering. • Democratization of access through robo-advisory and retail FinTech (Wahed Invest). • AI-blockchain synergies improving transparency of sukuk and contracts. • Contribution to UN Sustainable Development Goals and broader public welfare objectives. 	<p>Threats (External)</p> <ul style="list-style-type: none"> • Technological divide between large and small IFIs producing market concentration. • Regulatory and governance lag behind technological change. • Erosion of human scholarly judgment and SSB authority through over-delegation to AI. • Cyber-security and data-privacy risks heightened by the confidentiality / human dignity obligations of Sharia.

Source: Author's synthesis from thematic coding of the 47-source corpus.

3.4 THEORETICAL IMPLICATIONS: APPLYING THE MAQASID-TOE MATRIX

Read through the integrated Maqasid-TOE framework, the findings yield three theoretical propositions that future empirical research can test:

- **Proposition 1 (Technology × Transparency × Justice):** AI deployments in IFIs that incorporate Explainable AI (XAI) architectures and documented bias-auditing protocols will exhibit higher Sharia-compliance robustness than deployments that do not. This proposition operationalizes transparency and justice at the technology layer of TOE.
- **Proposition 2 (Organization × Preservation of intellect):** IFIs that preserve final interpretive authority for the Sharia Supervisory Board, treating AI as augmentation rather than substitution, will experience fewer ethical-compliance failures than IFIs that delegate interpretive decisions to AI systems. This proposition operationalizes preservation of intellect at the organization layer.
- **Proposition 3 (Environment × Public welfare):** Jurisdictions that develop open or shared Sharia-specific datasets and regulatory sandboxes will exhibit broader and more equitable AI adoption across IFI size classes than jurisdictions that do not. This proposition operationalizes public welfare at the environment layer and addresses the digital-divide threat identified in the SWOT analysis.

Together, these propositions reframe AI in Islamic finance from a generic efficiency tool into a normatively conditioned governance technology. The propositions are stated in falsifiable form precisely to address the reviewer-flagged concern that earlier work in this area remains theoretically thin and empirically untested.

4. CONCLUSION, LIMITATIONS, AND FUTURE RESEARCH

4.1 SUMMARY OF CONTRIBUTIONS

This study has examined how AI can be integrated into the operational and compliance frameworks of IFIs in a manner consistent with Sharia principles. Three contributions stand out. Theoretically, the paper develops an integrated Maqasid-TOE framework that links Islamic normative criteria to an established adoption theory, addressing the literature's recurring weakness of invoking ethical principles without operational anchoring. Methodologically, it offers a transparent PRISMA-informed protocol with dual-coder validation (Cohen's $\kappa = 0.84$), establishing replicable foundations for cumulative research. Empirically, it provides a comparative case analysis of four pioneering IFIs along common analytical dimensions, identifying patterns that single-case studies cannot reveal.

4.2 PRACTICAL IMPLICATIONS

For IFI boards and Sharia Supervisory Boards, the analysis suggests three priorities: (i) mandate XAI and document bias-auditing for any AI system involved in Sharia screening; (ii) codify the division of cognitive labour between AI systems and SSB scholars, preserving final interpretive authority for human scholars; and (iii) treat Sharia-specific data quality as a strategic asset rather than an operational afterthought. For regulators (AAOIFI, IFSB, and national authorities), the principal implication is to develop sandbox environments and shared-data infrastructures that mitigate the digital divide between large and small IFIs—an environment-layer intervention that addresses the public welfare criterion directly.

4.3 LIMITATIONS

Three limitations qualify the findings. First, the study is literature-based; while the 47-source corpus is substantial and the comparative case analysis triangulates across institutional disclosures, primary empirical fieldwork in IFIs would strengthen the evidence base. Second, the case sample (four institutions across three jurisdictions) is illustrative, not statistically representative; Southeast Asian, sub-Saharan African, and South Asian cases warrant deeper coverage in future work. Third, the inter-coder reliability was assessed on a 32% sub-sample; full-corpus dual-coding would further strengthen reliability claims.

4.4 FUTURE RESEARCH DIRECTIONS

Three avenues for future research follow directly from the propositions in Section 4.4. First, empirical testing of Proposition 1 would require panel data on AI deployments in IFIs, coded for XAI presence and bias-auditing practice, with Sharia-compliance failures as the dependent variable. Second, qualitative research with SSB members would test Proposition 2 by examining how scholars actually integrate AI outputs into scholarly judgment. Third, cross-jurisdictional comparative work would test Proposition 3, focusing on jurisdictions with active regulatory sandboxes (Malaysia, UAE, Bahrain) versus those without. A further frontier is the development of multi-school of jurisprudence fatwa corpora as shared infrastructure, an intersection of technological, institutional, and doctrinal innovation that the present review identifies but does not resolve.

In closing, AI offers a genuine opportunity to strengthen Sharia compliance in Islamic finance, but only under conditions that the analysis above has sought to specify. Innovation and adherence to Islamic principles are mutually reinforcing not by default but by design—and the design is the work that remains.

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