



Artificial Intelligence and Internal Audit Effectiveness in Islamic Financial Institutions: A Conceptual Paper

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DOI: <https://dx.doi.org/10.47772/IJRISS.2025.914MG00195>

Received: 19 October 2025; Accepted: 25 October 2025; Published: 13 November 2025

ABSTRACT

Artificial Intelligence (AI) is transforming internal audit functions in financial institutions, offering capabilities such as predictive analytics, automated risk assessment, and real-time monitoring. In Islamic financial institutions (IFIs), integrating AI presents unique challenges and opportunities, particularly in aligning technological innovations with Shariah governance and ethical principles. Despite growing interest in AI applications, research on integrating AI into internal auditing for IFIs remains limited. This study proposes a conceptual framework illustrating the role of AI in enhancing internal audit effectiveness while ensuring compliance with Maqasid al-Shariah. The framework addresses key opportunities, including improved efficiency, fraud detection, and compliance monitoring, as well as conceptual challenges such as algorithmic bias, data privacy, and ethical accountability. The paper contributes to theory by extending audit and governance literature through the lens of digital transformation in Islamic finance. Practical implications are offered for regulators, Shariah boards, and internal auditors seeking to adopt AI responsibly. Future research directions include empirical validation of the proposed framework and cross-comparative studies with conventional financial institutions.

Keywords: Artificial Intelligence, internal audit effectiveness, Islamic financial institution, Shariah governance, digital transformation in auditing

INTRODUCTION

Internal auditing plays a pivotal role in ensuring governance, accountability, and compliance within financial institutions. For IFIs, the internal audit function assumes an additional responsibility: safeguarding adherence to Shariah principles while maintaining operational integrity and financial soundness. This dual mandate differentiates IFIs from their conventional counterparts and amplifies the importance of internal audit as a governance mechanism (Islam et al., 2025).

The rapid evolution of financial technologies, particularly AI, has significantly disrupted traditional auditing practices. AI applications, such as machine learning (ML), natural language processing (NLP), and robotic process automation (RPA), are increasingly employed to enhance audit efficiency, accuracy, and fraud detection capabilities (Adelakun et al., 2024). While these technological advancements present new opportunities for internal audit functions, they also pose complex challenges, particularly for institutions operating under Shariah governance frameworks (Gorian & Osman, 2024).

Despite the growing body of literature on AI adoption in auditing and accounting, research exploring its application within IFIs remains limited. Existing studies mainly focus on AI's technical abilities or its effects on traditional financial services, often overlooking the unique governance and ethical issues in Islamic finance (Shalhoob, 2025). Therefore, there is an urgent need for conceptual research that combines AI-driven audit practices with Shariah compliance requirements, offering a clear understanding of both the opportunities and challenges involved.

This paper addresses this gap by proposing a conceptual framework that positions AI as a transformative enabler of internal audit effectiveness in IFIs. The study explores three key questions:



1. What opportunities does AI present for internal audit effectiveness in IFIs?
2. What conceptual and ethical challenges arise from integrating AI within Shariah governance frameworks?
3. How can internal audit leverage AI technologies while ensuring compliance with Islamic principles?

The contributions of this paper are twofold. Theoretically, it extends the discourse on internal audit effectiveness and digital transformation by introducing an Islamic finance perspective grounded in Maqasid al-Shariah. In practice, it provides actionable insights for auditors, regulators, and Shariah boards seeking to implement AI to enhance efficiency without compromising ethical and religious obligations.

The remainder of this paper is organized as follows: Section 2 presents a comprehensive literature review on internal audit effectiveness in IFIs, AI applications in auditing, and Shariah governance considerations. Section 3 introduces the proposed conceptual framework. Section 4 discusses the opportunities and challenges of AI integration in internal audit functions. Section 5 outlines theoretical and practical implications, and Section 6 concludes with recommendations for future research.

LITERATURE REVIEW

Internal Audit in IFIs

Internal audit is a cornerstone of corporate governance in financial institutions, serving as a mechanism to ensure risk management, compliance, and operational efficiency (Ilori et al., 2024). In the context of IFIs, internal audit carries an additional obligation: ensuring that all operations, products, and processes comply with Shariah principles (Hanefah et al., 2020). This dual responsibility distinguishes internal auditing in IFIs from conventional financial institutions, where compliance primarily focuses on regulatory and financial standards.

The governance structure of IFIs typically consists of two key layers: the Board of Directors (BOD) and the Shariah Supervisory Board (SSB). While the board ensures adherence to general governance principles, the SSB is tasked with ensuring that all activities conform to Islamic law (Alam et al., 2022). Internal audit operates within this framework, acting as a bridge between operational processes and governance oversight. It evaluates internal controls, risk exposures, and compliance with Shariah guidelines, thereby safeguarding financial institutions' reputations and integrity (Hanefah et al., 2020).

However, traditional internal audit approaches in IFIs have been criticized for their reliance on manual processes, limited data analytics capabilities, and reactive methodologies (Khalid & Sarea, 2021). These limitations hinder their ability to address emerging risks, such as cyber threats and sophisticated financial crimes. The need for innovation in internal audit practices has become more pronounced as IFIs navigate complex operational environments and increasing regulatory expectations.

AI in Auditing

AI has emerged as a transformative force in the auditing profession, introducing capabilities that significantly enhance audit quality and efficiency. AI technologies such as ML, NLP, and RPA enable auditors to analyze large volumes of data, detect anomalies, and predict risks with greater accuracy than traditional techniques (Fedyk et al., 2022).

Key applications of AI in auditing include automated data extraction, continuous auditing, fraud detection, and predictive risk analytics (Antwi et al., 2024). By leveraging AI, auditors can perform real-time monitoring and gain insights from previously difficult-to-audit unstructured data sources, such as emails and contracts (Leocádio et al., 2024). This shift from retrospective to predictive auditing aligns with the broader trend toward proactive risk management in financial services.

Despite these advancements, AI integration into audit processes is not without challenges. Concerns regarding algorithmic transparency, data privacy, and ethical accountability have been widely reported (Murikah et al., 2024). In addition, Murikah et al. (2024) added that auditors must address the risk of over-reliance on AI systems,

which may lead to reduced professional skepticism and increased vulnerability to systemic errors if the underlying algorithms are flawed. These challenges become even more complex when applied to IFIs, where compliance with ethical and religious standards is paramount.

Shariah Governance and Compliance in Islamic Finance

Shariah governance refers to the set of arrangements that ensure an IFI's operations, transactions, and structures comply with Shariah principles (Wasim & Zafar, 2024). The central role of Shariah governance is to uphold the objectives of Maqasid al-Shariah, which encompass justice, fairness, and societal welfare (Alam et al., 2021).

IFIs typically establish SSBs to oversee compliance. These boards issue fatwas, review contracts, and audit financial transactions to ensure adherence to Islamic principles (Alam, Ab Rahman, et al., 2021). However, the growing complexity of financial products and digital innovations presents new challenges for Shariah governance. For example, algorithmic decision-making in AI systems must align with Islamic ethical norms, requiring transparency and explainability to prevent decisions that conflict with Shariah (Elmahjub, 2023).

The integration of AI into internal audit functions introduces additional dimensions to Shariah governance. AI systems must not only comply with conventional regulatory standards but also uphold ethical values derived from Islamic law. This dual compliance requirement underscores the importance of developing a conceptual framework that embeds Shariah principles into AI-enabled internal audit effectiveness.

The Intersection of AI, Internal Audit, and IFI

The convergence of AI technologies and Islamic finance creates both opportunities and challenges. On one hand, AI can enhance internal audit effectiveness by automating compliance checks, monitoring transactions for Shariah adherence, and providing real-time risk assessments (Abdullah & Almaqtari, 2024). On the other hand, the opacity of AI algorithms and the potential for bias raise concerns about accountability and trustworthiness (Kokina et al., 2025).

Recent studies have highlighted the potential benefits of AI in Islamic finance, including improved operational efficiency and enhanced monitoring of Shariah compliance (Khan & Rabbani, 2021). However, the literature remains scattered, with few conceptual models addressing how AI integrates into internal audit frameworks for IFIs. Additionally, most current research takes a technological view, neglecting governance and ethical aspects that are vital to IFIs. While conventional banks mainly face technical and regulatory challenges in adopting AI, IFIs face additional complexities, including verifying Shariah compliance, designing ethical algorithms, and managing dual governance oversight.

This gap calls for a comprehensive conceptual framework that synthesizes insights from auditing, AI, and Islamic governance literature. Such a framework should delineate the mechanisms through which AI can improve audit performance while preserving ethical integrity and compliance with Maqasid al-Shariah.

Theoretical Underpinnings

The conceptualization of AI-enabled internal auditing in IFIs can be grounded in three prominent theories:

- **Agency Theory:** Internal audit functions as a monitoring mechanism to reduce information asymmetry between principals (stakeholders) and agents (management). AI enhances this monitoring capacity by enabling continuous auditing and real-time oversight (Jensen & Meckling, 1976).
- **Institutional Theory:** Regulatory and normative pressures influence the adoption of AI in internal audit functions. In IFIs, institutional legitimacy extends to compliance with Shariah principles, shaping the adoption of AI technologies (DiMaggio & Powell, 1983).
- **Stakeholder Theory:** Internal audit must address the expectations of multiple stakeholders, including shareholders, regulators, customers, and SSBs. AI adoption can strengthen stakeholder trust by improving transparency and accountability, provided ethical concerns are addressed (Freeman, 1984).



By integrating these theories, the proposed conceptual framework aims to explain how AI-driven internal audit can achieve operational efficiency while maintaining compliance with Islamic finance's religious and ethical norms.

METHODOLOGY

This study employs a conceptual research design to develop a theoretical framework that explains how AI can be integrated into IFIs' internal audit effectiveness. Instead of empirical testing, it focuses on synthesizing existing knowledge through a thorough review and critical analysis of peer-reviewed academic literature, industry reports, and relevant Shariah governance frameworks published mainly between 2020 and 2025. This method helps identify key themes, trends, opportunities, and conceptual challenges related to AI adoption in this specific context.

A systematic literature review was conducted using major databases, including Scopus, Web of Science, and Google Scholar. The search focused on scholarly articles, conceptual papers, and relevant industry publications related to AI in auditing, RegTech, internal audit, and Islamic finance. Inclusion criteria prioritized sources that offered theoretical foundations, practical applications, or critical insights into the intersection of AI, audit, and Shariah-compliance. Special attention was given to studies addressing the unique challenges of data privacy, algorithmic bias, and the interpretation of Shariah principles within automated systems.

The reviewed literature was critically assessed for its relevance to theory, empirical strength, and consistency with the study's goal of developing a conceptual framework. This involved integrating diverse viewpoints to identify the factors that drive, hinder, or facilitate the effective implementation of AI in IFIs' internal audit effectiveness. Theoretical foundations were based on Agency Theory, Institutional Theory, and Stakeholder Theory, which help explain organizational and behavioral dynamics in the context of technological innovation within Shariah-governed entities.

This methodological approach ensures that the resulting conceptual framework is both theoretically sound and practically applicable to the Islamic finance ecosystem, providing a clear foundation for future empirical research and offering practical guidance to practitioners, auditors, and regulators. By emphasizing recent and authoritative literature, the study reflects the evolving landscape of AI and internal audit effectiveness as of 2025, with a specific focus on its implications for Islamic finance.

CONCEPTUAL FRAMEWORK

The integration of AI into internal audit effectiveness for IFIs requires a holistic framework that balances technological capabilities with Shariah governance principles. Unlike conventional finance, IFIs operate under dual regulatory obligations: compliance with financial regulations and adherence to Islamic law. Therefore, an AI-enabled internal audit framework must reconcile these dual requirements by embedding ethical and religious considerations into its structure while leveraging technological innovations to enhance audit effectiveness and accuracy.

Framework Development Rationale

The proposed conceptual framework builds upon insights from three key domains: (i) internal audit effectiveness in IFIs, (ii) AI applications in auditing, and (iii) Shariah governance requirements. The framework is theoretically grounded in Agency Theory, Institutional Theory, and Stakeholder Theory, which collectively explain the motivations, constraints, and expectations shaping AI adoption in internal audit (Jensen & Meckling, 1976; DiMaggio & Powell, 1983; Freeman, 1984). Internal auditors in IFIs report that limited technical expertise, resistance from traditional audit teams, and unclear regulatory guidelines are the primary barriers preventing successful AI integration into daily audit operations (Desky & Maulina, 2022).

- **Agency Theory** suggests that internal audit serves as a monitoring mechanism to reduce information asymmetry between principals (stakeholders) and agents (management). AI enhances monitoring by

enabling real-time auditing, predictive risk analytics, and continuous compliance assessment (Swain & Gochhait, 2022).

- **Institutional Theory** emphasizes the influence of regulatory, normative, and cognitive forces on organizational practices. For IFIs, institutional legitimacy depends on compliance with Shariah norms and global auditing standards, thereby shaping the adoption and design of AI systems (Karbhari et al., 2020).
- **Stakeholder Theory** asserts that organizations must satisfy the expectations of multiple stakeholders, including shareholders, regulators, customers, and SSBs, whose trust depends on transparent and ethical use of AI in auditing processes (Laine et al., 2024).

This theoretical integration provides the basis for identifying key components of an AI-enabled internal audit framework for IFIs.

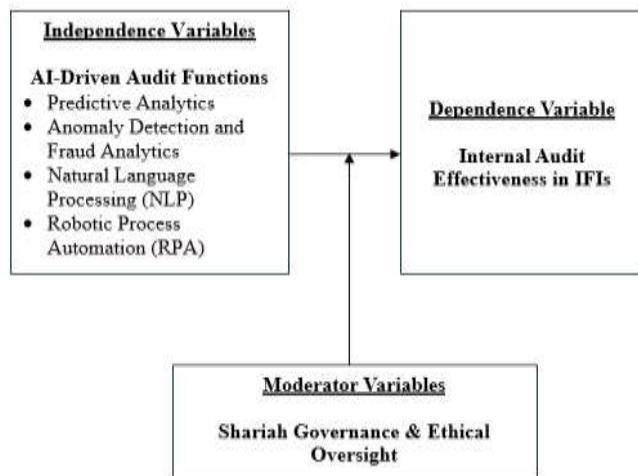
Components of the Proposed Framework

The proposed framework consists of three interrelated layers:

1. AI-Driven Audit Functions,
2. Internal Audit Effectiveness, and
3. Shariah Governance and Ethical Oversight.

Each layer performs a critical role in ensuring that AI adoption enhances internal audit effectiveness without compromising Islamic principles.

Diagram 1: Conceptual Framework of Internal Audit Effectiveness in IFIs



Layer 1: AI-Driven Audit Functions

This layer represents the technological capabilities that enable enhanced internal audit performance. Key components include:

- **Predictive Analytics:** AI algorithms analyze historical and real-time data to forecast risk patterns and identify emerging threats, enabling proactive audit planning (Thakkar et al., 2023).
- **Anomaly Detection and Fraud Analytics:** ML learning tools identify irregularities in financial transactions and operational data that may indicate fraud or Shariah non-compliance (Bello et al., 2024).
- **Natural Language Processing (NLP):** NLP systems review contracts and documentation to verify compliance with Shariah principles, particularly in complex Islamic finance contracts such as Murabaha and Ijarah (Khan & Rabbani, 2021).

- **Robotic Process Automation (RPA):** Automates routine audit tasks such as data collection, reconciliations, and reporting, freeing auditors to focus on higher-value analysis (Lacurezeanu et al., 2020).

The inclusion of these capabilities enables internal audit functions to move from a reactive, sample-based approach to a proactive, comprehensive auditing process.

Layer 2: Internal Audit Effectiveness Process

For AI adoption to be effective, it must be embedded in the core stages of the internal audit process — planning, execution, and reporting — while aligning with organizational objectives and risk appetite.

- **Audit Planning:** AI-driven risk assessments inform audit priorities by identifying high-risk areas, such as transactions with potential Shariah compliance issues (Hamadou et al., 2024).
- **Audit Execution:** Continuous auditing using AI tools enables near real-time monitoring of transactions, reducing the lag between occurrence and detection of anomalies (Minkkinen et al., 2022).
- **Audit Reporting:** AI-generated dashboards provide actionable insights for management and SSBs, improving transparency and decision-making (Badmus et al., 2024).

Integration within the audit lifecycle ensures that AI serves as a value-adding enabler rather than an isolated technological solution.

Layer 3: Shariah Governance and Ethical Oversight

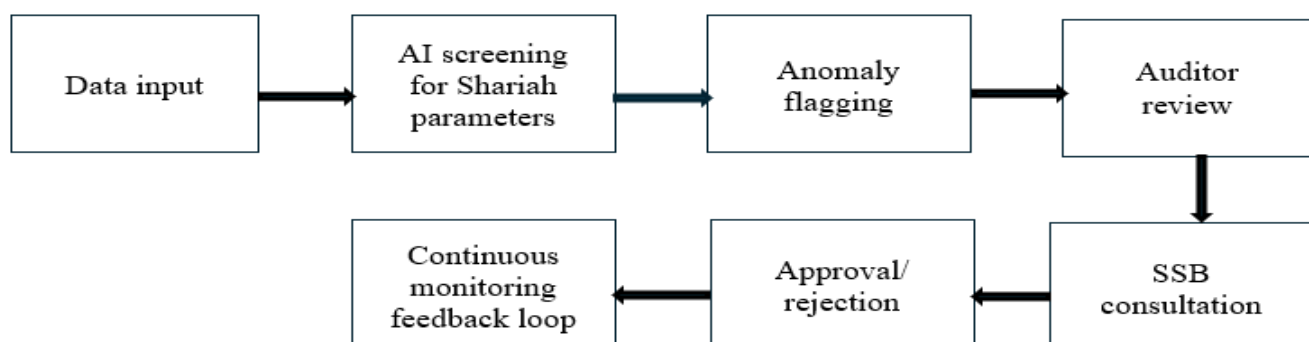
The defining feature of the proposed framework is the incorporation of a Shariah compliance and ethical oversight layer (Diagram 2). This layer ensures that AI applications in internal audit adhere to the principles of Maqasid al-Shariah, which emphasize justice, transparency, and societal welfare (Mohadi & Tarshany, 2023). AI systems must be designed with embedded Shariah parameters, including prohibition of Riba, Gharar, and Maysir as mandatory validation rules before processing any transaction.

Key considerations include:

- **Algorithmic Transparency:** AI models must be explainable to demonstrate that automated decisions align with Shariah principles and ethical norms (Ali et al., 2023).
- **Bias Mitigation:** Measures must be implemented to prevent algorithmic bias that could result in discriminatory or unethical outcomes (Varsha, 2023).
- **Data Privacy and Confidentiality:** AI systems must protect sensitive financial and personal information in accordance with both Shariah and regulatory standards (Rabbani et al., 2022).
- **Oversight Mechanisms:** SSBs should collaborate with AI governance committees to audit algorithms and validate their compliance with Islamic principles (Minaryanti & Mihajat, 2024).

This layer serves as a safeguard against ethical and legal risks, reinforcing stakeholder trust in AI-enabled internal audit systems.

Diagram 2: Shariah Compliance Transaction Flow



Interactions Among Framework Components

The framework suggests a dynamic interaction among the three layers:

- AI capabilities enhance the internal audit process by providing advanced analytical tools and automation.
- The internal audit process applies these tools in a structured manner to improve risk management and compliance monitoring.
- Shariah governance provides the normative and ethical boundaries within which AI technologies operate, ensuring legitimacy and stakeholder trust.

These interactions create a value loop in which technological innovation supports governance objectives, while governance constraints shape the ethical deployment of technology.

Conceptual Propositions

Based on the framework, the following propositions guide future empirical research:

- **Proposition 1:** AI adoption significantly enhances internal audit effectiveness in IFI.
- **Proposition 2:** Shariah governance moderates the relationship between AI adoption and internal audit effectiveness, ensuring compliance with ethical norms.
- **Proposition 3:** Effective integration of AI into internal audit processes improves risk detection and compliance monitoring but requires robust oversight to mitigate algorithmic and ethical risks.

Expected Contributions

The proposed framework contributes to the literature by:

- Offering a multi-layered conceptual model that integrates technology and Shariah governance in internal audit processes.
- Extending audit and governance theories by incorporating digital transformation and Islamic ethical considerations.
- Providing a foundation for empirical testing and policy formulation on AI-enabled auditing in IFIs.

Opportunities And Conceptual Challenges

The adoption of AI in internal audit effectiveness within IFIs presents a range of opportunities and challenges. While the integration of advanced technologies offers significant benefits in enhancing effectiveness, accuracy, and Shariah compliance monitoring, it also raises conceptual, ethical, and operational issues that must be carefully addressed. This section explores the dual nature of AI adoption by analyzing the key opportunities and the challenges associated with its implementation in the Islamic finance context.

Opportunities of AI-Driven Internal Audit in IFIs

Enhanced Audit Efficiency and Real-Time Monitoring

One of the most significant advantages of AI adoption in internal auditing is the ability to conduct continuous audits and monitor in real time. Traditional internal audit processes in IFIs are often periodic and rely on sampling, which limits their ability to detect anomalies promptly (Álvarez-Foronda et al., 2023). AI technologies such as RPA and ML allow auditors to process large volumes of transactions instantly, ensuring comprehensive coverage without compromising speed (Ilori et al., 2024). For IFIs, this capability is particularly valuable for monitoring complex financial products such as Murabaha, Ijarah, and Sukuk, where compliance with contractual terms is essential to Shariah compliance. For instance, Dubai Islamic Bank (DIB) in 2023 is accelerating its data transformation journey to build a robust foundation and data roadmap to support DIB's vision of becoming the most progressive Islamic financial institution (IBM Consulting, 2023).

Improved Fraud Detection and Risk Analytics

AI's predictive analytics capabilities significantly enhance internal auditors' ability to detect fraudulent activities and emerging risks. Algorithms can identify patterns and anomalies across vast datasets that may signal fraudulent behavior or operational inefficiencies (Hilal et al., 2022). In the context of IFI, where profit-sharing contracts like Mudarabah and Musharakah require transparency, AI-driven fraud detection can strengthen trust and reduce reputational risks. Moreover, AI facilitates risk-based auditing, enabling auditors to allocate resources effectively and focus on high-risk areas, including Shariah-sensitive transactions. Bank Islam Malaysia (BIMB), for example, is making significant and prudent investments in new technologies such as cloud computing, big data, AI, and open banking (Talib, 2025).

Strengthened Shariah Compliance Monitoring

Ensuring Shariah compliance is a fundamental objective of the internal audit in IFIs. AI technologies such as NLP can review legal documents, contracts, and fatwas to verify compliance with Shariah standards (Khan & Rabbani, 2021). By automating compliance checks, AI reduces human error and subjectivity, ensuring greater consistency and accuracy in Shariah governance practices. Furthermore, AI tools can provide early alerts for potential non-compliance issues, allowing IFIs to take corrective action before they escalate into regulatory breaches. In 2023, Kuwait Finance House (KFH) piloted NLP technology to automatically review Ijarah lease agreements against Shariah standards, detecting non-compliant clauses in 15% of contracts that had passed manual review. KFH also advanced its digital banking by expanding services, upgrading infrastructure, and enhancing customer support through platforms, smart branches, and kiosks (KFH, 2024).

Data-Driven Decision Support

AI-enabled auditing provides actionable insights through advanced data analytics, supporting informed decision-making at both operational and strategic levels. For example, AI dashboards can present real-time key performance indicators (KPIs) related to risk, compliance, and governance, which can be shared with the BODs and SSBs (Adelakun, 2022). This transparency enhances accountability and supports stakeholder trust, aligning with the objectives of Maqasid al-Shariah by promoting justice and fairness.

Cost Efficiency and Resource Optimization

Automating routine audit tasks with AI technologies, such as RPA, reduces time and labor costs associated with manual processes. This efficiency allows internal auditors to focus on higher-value activities, such as strategic risk assessment and advisory roles (Lacurezeanu et al., 2020). For IFIs operating in competitive markets, AI integration can enhance profitability while maintaining compliance obligations.

Conceptual Challenges of AI Adoption in IFI Audits

Despite these opportunities, integrating AI into IFI's internal audit effectiveness raises several conceptual and practical challenges that warrant careful consideration.

Algorithmic Transparency and Explainability

AI systems often operate as "black boxes," making it difficult to understand the reasoning behind automated decisions (Hassija et al., 2024). In Islamic finance, this lack of transparency poses a significant concern because Shariah governance requires accountability and clarity in decision-making. If AI-generated conclusions cannot be explained in terms of compliance with Islamic principles, stakeholders may question the legitimacy of audit findings. Therefore, explainable AI (XAI) solutions are critical to ensure that automated processes align with Shariah requirements and ethical standards. Implementing XAI features requires creating human-readable decision trees that map each automated decision to specific Shariah rulings, enabling scholars to trace and verify the Islamic jurisprudence basis.

Ethical and Shariah Compliance Risks

While AI can facilitate compliance monitoring, it also introduces new ethical risks. For example, if algorithms are designed without incorporating Islamic principles, they may inadvertently approve transactions that violate Shariah rules (Murikah et al., 2024). Additionally, reliance on AI could marginalize Shariah scholars in governance processes, undermining the human oversight traditionally valued in Islamic finance. These risks underscore the need for SSBs to actively participate in the design, implementation, and auditing of AI systems. Haridan et al. (2020) also warn that AI systems trained on conventional banking data may inadvertently approve transactions containing hidden Riba elements or make decisions that contradict the spirit of Islamic law despite technical compliance.

Algorithmic Bias and Fairness

ML models are susceptible to biases embedded in training data, which can result in unfair or discriminatory outcomes (Werner de Vargas et al., 2023). In Islamic finance, where ethical considerations are paramount, such biases could lead to decisions that contradict the principles of justice and equity, which are fundamental to Maqasid al-Shariah (Pagano et al., 2023). Addressing bias requires rigorous testing, validation, and inclusion of ethical parameters in algorithm design.

Data Privacy and Cybersecurity

AI adoption in auditing involves processing vast amounts of sensitive financial and personal data, raising concerns about data privacy and cybersecurity (Kokina et al., 2025). IFIs must comply not only with global data protection regulations but also with ethical norms that emphasize confidentiality and trust. Data security breaches could erode stakeholder confidence and compromise Shariah objectives related to safeguarding wealth and privacy.

Skills and Capacity Gaps

Successful implementation of AI-enabled auditing requires specialized skills in data analytics, ML, and AI governance, competencies that many internal audit teams in IFIs currently lack (Wazin et al., 2025). Bridging this skills gap requires significant investment in training and capacity building, as well as collaboration between auditors, IT specialists, and Shariah scholars, which entails costly infrastructure upgrades and system integration that can take months to complete.

Regulatory and Standardization Issues

The lack of standardized guidelines for AI adoption in Islamic finance creates uncertainty for practitioners and regulators alike. While conventional auditing standards provide a basis for technology integration, they do not address Shariah-specific requirements (Shalhoob, 2025). Developing comprehensive regulatory frameworks that balance innovation with compliance is essential for ensuring responsible AI deployment in internal auditing (Baharom, 2025).

Balancing Opportunities and Challenges

The effective integration of AI into IFIs' internal audit processes relies on balancing technological capabilities with the safeguarding of ethical principles. JPMorgan Chase's AI fraud detection system cut fraudulent transactions by 40% during pilot tests, marking a significant advancement in financial security (JP Morgan, 2025). It shows the scalability IFIs can achieve by adding Shariah-specific validation layers to prevent interest-based or speculative transactions. Although AI offers transformative opportunities to improve audit effectiveness and compliance, it also presents conceptual challenges that need proactive governance and oversight. Tackling these challenges requires a multi-stakeholder approach that brings together regulators, SSBs, auditors, and technology providers to develop standards, guidelines, and ethical frameworks for AI use in Islamic finance.

Theoretical And Practical Implications

The integration of AI into internal audit functions within IFIs introduces new dimensions to the discourse on governance, risk management, and auditing practices. This section highlights the theoretical contributions and practical implications of the proposed conceptual framework, offering guidance to academics, practitioners, regulators, and Shariah governance authorities.

Theoretical Implications

Extending Internal Audit Literature through Digital Transformation

The traditional internal audit literature has primarily focused on manual or semi-automated processes aimed at ensuring compliance and mitigating risk (Khalid & Sarea, 2021). The conceptual framework presented in this paper expands this body of knowledge by incorporating AI-driven technologies, positioning internal auditing as an advanced, technology-enabled function. This extension acknowledges the shift from retrospective auditing toward predictive, data-driven approaches, a trend that has received limited attention in the Islamic finance context (Khan & Rabbani, 2021).

By situating internal audit within the broader context of digital transformation, this framework contributes to a nuanced understanding of how technological innovations influence organizational governance structures, particularly in dual-compliance environments where Shariah principles coexist with conventional regulations.

Integrating Shariah Governance with Technological Innovation

A significant theoretical contribution of this study lies in its integration of Shariah governance principles with AI-based internal auditing. While conventional audit research emphasizes regulatory compliance and operational efficiency, Islamic finance introduces additional layers of complexity due to its ethical and religious obligations (Hanefah et al., 2020). The proposed framework embeds Maqasid al-Shariah principles — justice, transparency, and societal welfare — within AI-driven audit processes, offering a unique theoretical lens that aligns technological innovation with Islamic ethical norms.

This integration addresses a critical gap in the literature by demonstrating that digital transformation in auditing cannot be approached from a purely technical perspective; instead, it requires a multidimensional approach that harmonizes technological, ethical, and governance considerations.

Theoretical Foundation for Future Empirical Research

The conceptual framework generates propositions that invite empirical validation, thereby contributing to theory-building in auditing and Islamic finance. For instance, the moderating role of Shariah governance in the relationship between AI adoption and internal audit effectiveness offers fertile ground for future quantitative studies. Similarly, qualitative research could explore perceptions of Shariah scholars, auditors, and regulators on AI-driven auditing practices. These potential research pathways underscore the framework's role as a foundational model for advancing academic inquiry in this domain.

Practical Implications

Strengthening Internal Audit Capabilities

The framework provides actionable insights for IFIs seeking to modernize their internal audit functions. By leveraging AI tools such as predictive analytics, anomaly detection, and NLP, internal auditors can enhance effectiveness, reduce manual errors, and achieve comprehensive coverage of high-risk areas (Fedyk et al., 2022). These capabilities enable IFIs to transition from traditional, sample-based audits to continuous auditing systems that offer real-time assurance of compliance with both regulatory and Shariah standards.



Enhancing Shariah Compliance Monitoring

SSBs and internal auditors share the responsibility of ensuring adherence to Islamic principles. The adoption of AI facilitates automated verification of complex contracts, early detection of non-compliant transactions, and systematic documentation for Shariah reviews (Khan & Rabbani, 2021). The practical implementation of these technologies requires close collaboration among IT specialists, auditors, and Shariah scholars to design algorithms that comply with the ethical and legal requirements of Islamic finance. SSB members express concerns that while AI can efficiently flag potential non-compliance, the final determination of Shariah permissibility requires human scholarly interpretation that cannot be fully automated (Hemmet, 2023).

Addressing Governance and Ethical Risks

While AI provides operational benefits, it also brings new governance challenges related to algorithmic transparency, bias, and accountability (Kokina et al., 2025). The framework recommends creating AI governance committees within IFIs, including members such as Shariah scholars, auditors, and data scientists. These committees should establish policies for algorithm validation, bias detection, and compliance audits to ensure that AI systems operate in accordance with Islamic ethical standards and regulatory requirements. AI governance committees should follow a five-step validation process: reviewing algorithm design, testing Shariah-compliant parameters, conducting bias-detection audits, obtaining SSB approval, and performing quarterly compliance checks.

Building Organizational Capacity

The successful integration of AI in internal audit requires significant investment in human capital. IFIs must develop training programs that equip internal auditors with competencies in AI applications, data analytics, and digital governance frameworks (Shalhoob, 2025). Partnerships with academic institutions and technology providers can accelerate capacity building, reduce reliance on external consultants, and foster internal expertise.

Policy and Regulatory Development

The lack of standardized guidelines for AI adoption in Islamic financial auditing risks consistency and compliance across jurisdictions. Regulators such as the Islamic Financial Services Board (IFSB) and national Shariah advisory bodies should develop AI governance standards tailored to the unique requirements of Islamic finance (Shalhoob, 2025). These standards should address key areas, such as algorithm transparency, data privacy, and Shariah audit protocols, to provide a unified framework for responsible AI deployment.

CONCLUSION AND FUTURE RESEARCH DIRECTIONS

Conclusion

AI has become a transformative force in the auditing field, especially for IFIs, given their dual responsibility to ensure financial integrity and to adhere strictly to Shariah principles. This paper introduces a conceptual framework that combines AI capabilities with internal audit effectiveness, supported by Shariah governance. The framework highlights three interconnected layers—AI-based audit functions, internal audit effectiveness, and Shariah governance and ethical oversight—creating a comprehensive model that utilizes technological innovation while upholding ethical and legal standards specific to Islamic finance. Although AI presents significant opportunities, such as improved audit effectiveness, real-time risk monitoring, better fraud detection, and enhanced Shariah compliance verification, these advantages are balanced by notable challenges like algorithmic transparency, ethical risks, ML model bias, data privacy issues, and the lack of standardized regulations for AI use in Islamic finance.

The integration of AI into internal auditing in IFIs is more than just a technological shift; it is a strategic necessity that combines technological innovation with ethical and religious principles. This framework expands the internal audit literature by incorporating principles of Maqasid al-Shariah into AI-enabled auditing processes,

adding to discussions on how new technologies can align with religious and ethical governance systems. In practice, it offers practical guidance for IFIs, with main recommendations such as establishing AI governance committees, developing explainable AI solutions, involving SSBs in algorithm audits, and investing in human capital. Successful AI adoption depends on a balanced approach that protects the integrity of Shariah governance while leveraging digital transformation opportunities.

Future Research Directions

The conceptual nature of this paper encourages future research to empirically verify the proposed framework and its underlying propositions through several promising approaches. Quantitative studies could assess the impact of AI adoption on internal audit effectiveness, risk management, and outcomes in Shariah compliance. Cross-jurisdictional comparative analyses could investigate AI integration in both Islamic and conventional financial institutions to identify unique governance challenges and best practices. Future research might also examine how XAI models enhance algorithmic transparency and stakeholder trust in Islamic finance, particularly in Shariah auditing. Additionally, qualitative studies involving regulators, Shariah scholars, and auditors could help develop AI governance standards specific to Islamic finance. Comparative research should examine how central banks such as HSBC and Citibank address algorithmic bias and data privacy concerns, drawing lessons for IFIs while noting necessary Shariah-specific adjustments. By pursuing these avenues, future research can extend the conceptual foundation of this paper to improve both academic understanding and practical implementation of AI-driven internal audit systems in IFIs.

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