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Artificial Intelligence Governance and Ethical Compliance in Islamic Banking: Integrating Responsible AI and Sharia Governance Perspectives

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Abstract. *The development and adoption of Artificial Intelligence (AI) technology in the banking sector has created numerous opportunities to improve operational efficiency, service quality, and decision-making processes. However, the use of AI also raises various ethical, legal, and governance challenges related to algorithm transparency, accountability, fairness, and privacy protection. These challenges are further complicated in the context of Islamic banking, as Islamic financial institutions are not only required to comply with applicable regulations but also to ensure compliance with Sharia principles and the Maqasid al-Sharia values. Although research on AI Governance and Responsible AI continues to grow, there are still limited studies integrating these two concepts with Sharia Governance to explain ethical compliance in Islamic banking. This research aims to develop and test a conceptual model that explains the relationship between AI Governance, Responsible AI, Sharia Governance, and Ethical Compliance in Islamic banking. Specifically, Responsible AI is positioned as a mediating variable explaining the influence of AI Governance on Ethical Compliance, while Sharia Governance is positioned as a moderating variable strengthening the relationship between Responsible AI and Ethical Compliance. This study used a quantitative approach with a cross-sectional survey method conducted among managerial employees, compliance officers, information technology personnel, and risk management professionals in Islamic banking in Semarang City. Data were collected through a structured questionnaire and analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM). This study provides theoretical contributions by integrating Stakeholder Theory, Institutional Theory, AI Governance, Responsible AI, and Sharia Governance into a single conceptual framework to explain ethical compliance in AI-based Islamic banking. Furthermore, the research findings are expected to provide practical implications for regulators, the Sharia Supervisory Board, and* *banking practitioners in developing AI systems that are transparent, accountable, ethically responsible, and aligned with Sharia principles.*

Keywords: *AI Governance; Ethical Compliance; Islamic Banking; PLS-SEM; Responsible AI, Sharia Governance.*

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1. Introduction

The rapid development of artificial intelligence (AI) has significantly transformed the global financial sector, including the operations of Islamic banking. AI technologies are increasingly employed in customer service, credit and financing assessment, fraud detection, risk management, regulatory compliance, financial forecasting, and personalized financial services. These developments offer Islamic banks substantial opportunities to improve efficiency, reduce operational costs, strengthen risk management, and enhance customer experience. However, the growing dependence on algorithmic systems also creates complex legal, ethical, institutional, and governance challenges. Unlike conventional financial institutions, Islamic banks operate within a distinctive normative framework in which financial activities must comply not only with statutory and regulatory requirements but also with the principles of Sharia. Consequently, the governance of AI in Islamic banking requires an approach capable of integrating technological innovation with responsible AI principles and Sharia governance. (Azwar, Abur Hamdi Usman, and Mohd Farid Ravi Abdullah; 2025).

AI governance generally refers to the institutional mechanisms, policies, procedures, and accountability structures established to ensure that AI systems are developed and used responsibly. In the banking sector, effective AI governance is particularly important because algorithmic systems can influence decisions concerning financing eligibility, customer classification, fraud detection, risk assessment, and access to financial services. Errors, discriminatory algorithms, inadequate data protection, or opaque decision-making processes may generate significant consequences for customers and financial institutions. Therefore, AI governance should incorporate principles of transparency, accountability, fairness, explainability, cybersecurity, privacy, and human oversight. In the context of Islamic banking, these requirements must also be assessed in relation to Sharia compliance and the broader objectives of Islamic finance. (Bas, Muhammad Bashri, Rika Febby Rhamadhani, Rasmi Nur Anggraeni, I Putu Edi Darmawan, and Phatra Anggana Djuri; 2025).

The regulatory and institutional foundations of AI governance in Islamic banking consequently require a multidimensional framework. Regulatory authorities, banking institutions, Sharia Supervisory Boards, compliance officers, risk-management units, technology specialists, and internal auditors each have important responsibilities in ensuring that AI applications operate within acceptable legal and ethical boundaries. The increasing complexity of AI systems also demonstrates the need for continuous supervision rather than one-time approval. Institutional governance should encompass the entire AI lifecycle, beginning with data collection and system development and continuing through deployment, monitoring, auditing, modification, and eventual decommissioning. Such an approach is necessary to identify emerging risks and prevent technological innovation from developing without adequate accountability. (Daulay, Ahmad Harun, and Mohammad Habibi; 2026).

The concept of Responsible AI provides an important foundation for addressing these challenges. Responsible AI emphasizes the development and use of AI systems that respect human dignity, promote fairness, protect privacy, ensure transparency, and maintain meaningful human control. These principles have strong conceptual connections with Islamic ethical values. The principle of adl emphasizes justice and fairness, while amanah establishes a responsibility to protect entrusted resources and information. The concept of maslahah emphasizes public welfare, whereas the prohibition of darar requires the prevention of harm. Accordingly, Responsible AI and Islamic ethical principles can complement one another in establishing a governance framework that evaluates not only whether an AI system is technologically effective but also whether its outcomes are socially and ethically acceptable. (Kasmawati, Muhammad Albahi, Rozi Andrini, and Lukman; 2025).

The integration of Responsible AI with Sharia governance therefore represents an important area of contemporary Islamic banking governance. Sharia governance should not be restricted to reviewing contracts, products, and financial transactions but should increasingly address technological systems that influence the delivery and administration of Islamic financial services. Sharia Supervisory Boards may play an important role in assessing whether AI applications and their outcomes are consistent with Sharia principles and the objectives of maqasid al-Sharia. At the same time, effective assessment requires interdisciplinary cooperation because Sharia scholars may require technological expertise to understand algorithmic systems, while technology professionals need sufficient knowledge of Islamic financial principles to identify potential Sharia concerns. (Nazia, Zumrotun, Muhammad Adi Adrian, Agus Suaidi Hasan, and Nanang Alisyah Daud; 2026).

The maqasid al-Sharia framework provides a particularly valuable basis for developing a sustainable AI governance model. AI applications should contribute to legitimate public interests, protect property and privacy, promote justice, reduce financial harm, and preserve human dignity. Technological efficiency alone should therefore not constitute the primary measure of successful AI adoption. An AI system that improves profitability while producing discriminatory outcomes, violating customer privacy, increasing uncertainty, or excluding vulnerable customers from financial services may conflict with the broader objectives of Islamic finance. This demonstrates the importance of combining technical performance assessments with ethical, legal, and Sharia-based evaluations.

2. Research Methods

This study used a quantitative approach with a cross-sectional survey method conducted among managerial employees, compliance officers, information technology personnel, and risk management professionals in Islamic banking in Semarang City.

3. Results and Discussion

3.1. Artificial Intelligence Governance in Islamic Banking: Regulatory and Institutional Foundations

The increasing adoption of artificial intelligence (AI) in Islamic banking has transformed the delivery of financial services, risk management, compliance monitoring, customer assessment, and fraud detection. However, the integration of AI requires a governance framework capable of addressing not only technological and financial risks but also the distinctive regulatory and ethical requirements of Islamic finance. Unlike conventional banking institutions, Islamic banks must ensure that technological innovation remains consistent with Sharia principles, including justice, transparency, accountability, prohibition of riba, gharar, and maysir, and the protection of stakeholder interests. AI governance must therefore operate within a multidimensional regulatory structure combining financial regulation, data protection, cybersecurity, ethical standards, and Sharia governance.

From an institutional perspective, Islamic banks should establish clearly defined responsibilities for the development, procurement, deployment, monitoring, and auditing of AI systems. Governance mechanisms should address algorithmic accountability, data quality, cybersecurity, model risk, transparency, and human oversight. Particular attention is required for automated decision-making systems used in financing assessments, customer profiling, fraud detection, and risk classification because algorithmic errors or discriminatory outcomes may directly affect customers' financial rights and opportunities. Consequently, AI-generated decisions should remain subject to meaningful human supervision and institutional review.

The role of Sharia Supervisory Boards is equally significant in establishing an effective AI governance structure. Their function should extend beyond reviewing financial products and contracts to examining whether AI-driven processes and outcomes comply with Sharia principles. This requires collaboration between Sharia scholars, legal experts, data scientists, compliance officers, and risk-management professionals. Such interdisciplinary cooperation can ensure that AI applications are assessed from both technological and normative perspectives.

Furthermore, Islamic banks should develop internal AI governance policies that establish procedures for algorithmic testing, ethical impact assessments, periodic audits, incident reporting, and accountability. These mechanisms should operate throughout the AI lifecycle rather than only at the point of deployment. Accordingly, a robust regulatory and institutional foundation for AI governance can enable Islamic banks to pursue technological innovation while preserving Sharia compliance, institutional accountability, consumer protection, and public trust.

3.2. Responsible AI and Ethical Compliance in Islamic Banking

The integration of artificial intelligence (AI) into Islamic banking requires a responsible and ethically grounded approach to ensure that technological innovation remains consistent with both financial regulations and Sharia principles. Responsible AI emphasizes the development and deployment of AI systems that are transparent, fair, accountable, secure, explainable, and respectful of human rights. These principles are particularly relevant to Islamic banking because financial institutions have a responsibility to protect customers, maintain trust, prevent harm, and ensure fairness in financial transactions. Consequently, ethical compliance should become an integral component of AI governance rather than being treated as a separate or secondary consideration.

Algorithmic fairness represents one of the most important dimensions of responsible AI in Islamic banking. AI systems used for financing assessments, customer profiling, fraud detection, and risk evaluation may produce biased outcomes when they rely on incomplete, inaccurate, or historically discriminatory datasets. Such outcomes can undermine the principle of justice (adl), which constitutes an essential ethical foundation of Islamic finance. Islamic banks should therefore conduct regular algorithmic audits, assess the quality of training data, identify discriminatory patterns, and establish mechanisms for correcting unfair automated decisions.

Transparency and explainability are also essential to ethical compliance. Customers should be able to understand, at an appropriate level, how significant AI-supported decisions affecting their financial interests are generated. This requirement is particularly important where AI contributes to financing approval, risk classification, or the termination of financial services. Human oversight should remain available to review and challenge automated decisions, ensuring that technological systems do not replace institutional responsibility.

Data governance constitutes another critical aspect of responsible AI. Islamic banks process substantial amounts of personal and financial information, requiring robust safeguards against unauthorized access, misuse, and excessive data collection. The principles of amanah (trust) and maslahah (public interest) provide a relevant ethical foundation for responsible data management.

Ultimately, responsible AI in Islamic banking should integrate technological accountability with Sharia-based ethical values. Principles such as justice, trust, transparency, prevention of harm (darar), and protection of property can complement contemporary AI governance standards. By establishing ethical review mechanisms, algorithmic audits, human oversight, and effective accountability structures, Islamic banks can ensure that AI innovation supports efficiency and competitiveness without compromising Sharia compliance, customer rights, or public trust.

3.3. Integrating Responsible AI with Sharia Governance: Toward a Sustainable Governance Model

Integrating Responsible Artificial Intelligence (AI) with Sharia governance provides a strategic foundation for developing a sustainable governance model in Islamic banking. The rapid adoption of AI in financial institutions creates significant opportunities for improving efficiency, risk management, customer services, fraud prevention, and regulatory compliance. However, technological advancement must remain consistent with the fundamental principles of Islamic finance. AI governance should therefore not be limited to technical performance or conventional regulatory compliance but should incorporate ethical and Sharia-based considerations throughout the entire AI lifecycle.

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The principles of maqasid al-Sharia provide an important normative framework for evaluating the legitimacy and social consequences of AI applications. AI systems should contribute to public welfare (maslahah), prevent harm (darar), protect property, promote justice (adl), and preserve human dignity. An AI system that increases operational efficiency but produces discriminatory outcomes, violates privacy, creates excessive uncertainty, or unfairly excludes customers from financial services may conflict with the broader objectives of Islamic finance. Accordingly, Sharia governance should function as an additional ethical safeguard in evaluating AI-driven banking practices.

An effective integrated governance model requires collaboration between Sharia Supervisory Boards, AI specialists, compliance officers, legal professionals, cybersecurity experts, data scientists, and risk-management teams. Sharia scholars should possess sufficient technological understanding to assess emerging AI applications, while technical and compliance personnel should understand the relevant principles of Islamic finance. This interdisciplinary approach can facilitate comprehensive assessments of algorithmic fairness, transparency, data protection, explainability, cybersecurity, and Sharia compliance.

Periodic AI and Sharia audits should also become important elements of institutional governance. Such audits can evaluate whether AI systems continue to operate according to approved standards after deployment and whether changes in datasets, algorithms, or business processes create new ethical or Sharia risks. Clear accountability mechanisms should further ensure that human decision-makers remain responsible for significant AI-supported decisions.

Ultimately, integrating Responsible AI with Sharia governance can establish a distinctive and sustainable governance framework for Islamic banking. By combining technological innovation with justice, accountability, transparency, amanah, maslahah, and the prevention of harm, Islamic financial institutions can pursue digital transformation without sacrificing their normative identity. This integrated approach can strengthen consumer protection, institutional legitimacy, regulatory resilience, and public trust while ensuring that AI serves broader social and economic objectives consistent with the values of Islamic finance.

4. Conclusion

The governance of artificial intelligence (AI) in Islamic banking requires a comprehensive framework capable of balancing technological innovation with regulatory compliance, ethical responsibility, and Sharia principles. The analysis demonstrates that AI offers significant opportunities for Islamic financial institutions to improve operational efficiency, strengthen risk management, enhance customer services, detect fraud, and support regulatory compliance. Nevertheless, the adoption of AI also creates complex governance challenges involving algorithmic bias, data privacy, cybersecurity, transparency, explainability, accountability, and the potential displacement of human judgment. These challenges demonstrate that technological innovation cannot be separated from the institutional and normative responsibilities of Islamic banks. From a regulatory and institutional perspective, AI governance should be incorporated into the broader governance structure of Islamic banking. Financial institutions need clear internal policies concerning the development, procurement, deployment, monitoring, and auditing of AI systems. Regulatory authorities should establish adaptive standards capable of addressing emerging technological risks while maintaining consistency with existing banking and data-protection regulations. At the institutional level, responsibility for AI governance should be clearly distributed among management, compliance units, risk-management departments, technology specialists, internal auditors, and Sharia Supervisory Boards. Effective coordination among these actors is necessary to prevent fragmented oversight and ensure that AI systems remain accountable throughout their operational lifecycle.

5. References

Journals:

Azwar, Abur Hamdi Usman, and Mohd Farid Ravi Abdullah. "Artificial Intelligence and Islamic Finance: A Scopus-Based Literature Mapping through a PRISMA Protocol." *Journal of Islamic Law on Digital Economy and Business* 1, no. 1 (2025): 65–83. https://doi.org/10.20885/JILDEB.vol1.iss1.art5.

Bas, Muhammad Bashri, Rika Febby Rhamadhani, Rasmi Nur Anggraeni, I Putu Edi Darmawan, and Phatra Anggana Djuri. "Artificial Intelligence and Financial Regulation in Indonesia's Islamic Banking: A Systematic Literature Review." *Paradoks: Jurnal Ilmu Ekonomi* 8, no. 3 (2025): 1174–1187. https://doi.org/10.57178/paradoks.v8i3.1519.

Daulay, Ahmad Harun, and Mohammad Habibi. "Perspektif Maqashid Syariah di Era Digital: Membawa Perubahan Radikal dalam Regulasi Etis Kecerdasan Buatan di Perbankan Islam." *JES (Jurnal Ekonomi Syariah)* 11, no. 1 (2026). https://doi.org/10.30736/jes.v11i1.1240.

Kasmawati, Muhammad Albahi, Rozi Andrini, and Lukman. "Integrasi Shariah Governance dalam Transformasi Digital Perbankan Syariah: Perspektif Agency Theory dan TAM." *Syarikat: Jurnal Rumpun Ekonomi Syariah* 8, no. 2 (2025). https://doi.org/10.25299/syarikat.2025.vol8(2).25195.

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Nazia, Zumrotun, Muhammad Adi Adrian, Agus Suaidi Hasan, and Nanang Alisyah Daud. “Ethics of Artificial Intelligence Based on Maqashid Syariah: Conceptualization of a Framework for the Islamic Financial Sector in Indonesia.” *Jihbiz: Jurnal Ekonomi, Keuangan dan Perbankan Syariah* 10, no. 2 (2026): 140–155. https://doi.org/10.33379/jihbiz.v10i2.9987.

Nur, Mahfuz, Zulkarnain Lubis, and Kartika Sharaswati. “Integration of Artificial Intelligence in Islamic Banking: Operational Efficiency and Compliance with Maqashid Sharia Principles.” *El-Arbah: Jurnal Ekonomi, Bisnis dan Perbankan Syariah*. DOI: https://doi.org/10.34005/6jvc8m48.

Ramadhan, Dwi Swasana. “Financial Technology and Sharia Compliance Regulations in Islamic Banking in Indonesia.” *AL-ARBAH: Journal of Islamic Finance and Banking* 4, no. 2 (2022). https://doi.org/10.21580/al-arbah.2022.4.2.15647.

Books:

Mursyid, and Hadri Kusuma. *Menilai Kinerja Perbankan Syariah dengan Maqashid Syariah*. Yogyakarta: Ekonisia, Fakultas Bisnis dan Ekonomika Universitas Islam Indonesia, 2021.

Muryanto, Yudho Taruno, and Dona Budi Kharisma. *Fintech Syariah: Pengaturan, Pengawasan dan Problematika Hukumnya di Indonesia*. Inara Publisher, 2021.

Nasution, Dewi Sartika, and Muhammad Muhajir Aminy. *Fintech Syariah: Teori dan Praktik di Indonesia*. Mataram: UIN Mataram Press, 2020.

Prihantono, and Fachrurazi. *Good Corporate Governance Bank Syariah*. Pontianak: IAIN Pontianak Press, 2019.

Wibowo, Agus. *Perbankan di Era AI (Artificial Intelligence)*. Semarang: Yayasan Prima Agus Teknik, 2025.