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Article

Artificial Intelligence in Islamic Banking: Ethical and Operational Implications for Shariah Governance and Risk Management

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Abstract

This study examines the ethical and operational implications of Artificial Intelligence (AI) integration in Islamic banking, focusing on its influence on Shariah governance and risk management. As Islamic financial institutions in Southeast Asia and the Middle East increasingly adopt AI-driven systems—such as automated Shariah screening, risk analytics, and digital customer engagement platforms—the need to balance technological efficiency with Islamic ethical principles has become critical. Employing a qualitative research design, data were collected through semi-structured interviews with Shariah scholars, Islamic banking practitioners, regulators, and AI specialists. Thematic analysis, supported by NVivo software, was used to identify patterns and themes related to ethics, governance, and risk management. The findings reveal that while AI enhances accuracy, transparency, and efficiency in Shariah compliance and operational processes, it also introduces new ethical challenges concerning accountability, bias, and the potential dehumanization of decision-making. Participants emphasized the necessity of maintaining human oversight and ensuring that AI applications align with the higher objectives of Shariah (*Maqasid al-Shariah*), particularly in promoting justice, welfare, and public interest (*maslahah*). The discussion situates these insights within socio-technical systems theory, highlighting the interplay between technological systems and Islamic moral governance. Overall, the study concludes that AI can serve as a transformative tool in advancing Islamic finance if its deployment is guided by ethical principles, robust governance structures, and continuous Shariah supervision.

Keywords

Artificial Intelligence, Islamic Banking, Shariah Governance, Ethics, *Maqasid Al-Shariah*, Risk Management.

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Introduction

In recent years, the rapid advancement of Artificial Intelligence (AI) has transformed the global financial landscape, reshaping how banks and financial institutions operate, make decisions, and deliver services (Abbas Khan et al., 2024). AI encompassing technologies such as machine learning, natural language processing, predictive analytics, and robotic process automation has been widely recognized for its potential to revolutionize the efficiency, accuracy, and customer experience of financial operations (Ghulaxe,2024). From automating credit scoring to detecting fraudulent transactions and managing vast data systems, AI has emerged as a cornerstone of digital transformation in the banking sector (Ng & Kwok, 2021; Jamithireddy,2023). In conventional banking, these technologies have been adopted extensively to enhance competitiveness, reduce costs, and improve decision-making accuracy (Dwivedi et al., 2021). However, within the domain of Islamic banking, which functions under the distinctive ethical and legal parameters of Shariah, the integration of AI introduces both unprecedented opportunities and complex ethical, jurisprudential, and operational challenges (Mergaliyev et al., 2021).

Islamic banking is rooted in a moral-economic framework derived from the principles of *Maqasid al-Shariah* the objectives of Islamic law which emphasize justice (*'adl*), social welfare (*maslahah*), transparency, and the protection of human dignity (Avdukić & Smolo,2024). Unlike conventional finance, Islamic finance prohibits *riba* (interest), *gharar* (excessive uncertainty), *maysir* (gambling), and

investments in unethical industries, promoting instead equitable risk-sharing and real economic activity (Chapra, 2016; Ahmed, 2011; Kuyateh, 2025). As such, all financial transactions, contracts, and operations must comply with these Shariah principles and be subject to oversight by Shariah Supervisory Boards (SSBs) (Zahra & Khoirunnisa, 2025). The integration of AI into this ecosystem therefore raises critical questions about whether and how such technologies can align with Islamic ethical norms and governance mechanisms (Kannike & Fahm, 2025). For instance, AI algorithms often operate autonomously and may rely on opaque decision-making models commonly referred to as "black boxes" that challenge the Islamic principles of transparency (*amanah*) and accountability (*mas'uliyyah*) (Rahman & Rahim, 2022; Hassija et al., 2024). Despite these concerns, the potential of AI to strengthen Islamic banking operations cannot be ignored (Hamadou et al., 2024). AI offers transformative capabilities in areas such as customer service automation, real-time risk monitoring, credit evaluation, and compliance assurance (Nalini, 2024). In particular, AI-driven systems can improve Shariah compliance by automating transaction screening processes, identifying non-permissible elements in financial activities, and detecting anomalies that may indicate *gharar* or unethical investments (Ahmed et al., 2025). For example, AI-based Shariah screening tools can analyze large data sets to ensure that investments meet criteria established by Islamic jurisprudence, reducing human error and increasing operational efficiency (Hassan & Aliyu, 2021; Wazin et al., 2025). Similarly, predictive analytics can enhance the accuracy of risk assessment models by identifying early warning signs of credit default or liquidity risk, allowing Islamic banks to maintain stability and resilience in increasingly volatile markets (Faheem, 2021). However, alongside these operational benefits come profound ethical and governance dilemmas. AI systems depend heavily on data, and the quality, source, and management of that data have direct implications for Shariah compliance. The Islamic ethical framework places significant emphasis on the protection of human dignity (*karamah insaniyyah*), privacy, and justice in all transactions. The use of data-driven AI technologies raises concerns about data ownership, consent, potential discrimination, and surveillance—all of which may conflict with Islamic ethical values (Auda, 2008). Additionally, biases embedded in algorithmic models may inadvertently lead to discriminatory financial outcomes, such as unfair credit assessments or exclusionary lending practices. These issues are particularly problematic in the Islamic context, where fairness (*'adl*) and non-exploitation (*ihsan*) are core principles of financial justice. Furthermore, AI challenges traditional notions of accountability and human agency in Shariah governance. In the conventional model of Islamic banking, human oversight—through SSBs, Shariah audits, and compliance reviews—is fundamental to ensuring that financial operations remain consistent with Islamic law. The increasing autonomy of AI decision-making threatens to blur the lines of accountability. If an AI algorithm makes an investment decision that later proves to be non-compliant with Shariah principles, determining responsibility becomes problematic: should it lie with the AI developer, the financial institution, or the Shariah board that approved its use? (Dusuki & Abozaid, 2020). This "accountability gap" necessitates a re-evaluation of existing Shariah governance structures to incorporate technological ethics, human-AI collaboration mechanisms, and digital transparency standards that uphold Islamic moral responsibility.

Shariah governance is a crucial pillar of the Islamic financial system. It ensures that Islamic banks not only comply with the letter of Shariah but also embody its spirit of social justice and ethical conduct. The Islamic Financial Services Board (IFSB, 2020) defines Shariah governance as a system through which Islamic financial institutions ensure that their operations, activities, and products adhere to Shariah principles. This system includes oversight by SSBs, internal Shariah reviews, and periodic audits. However, the integration of AI into these governance processes introduces a new

dimension of complexity. For example, Shariah audits that rely on automated systems might increase efficiency but could also reduce the depth of human ethical reasoning that is vital for contextual judgment. Likewise, the use of AI in decision-making might shift the focus from jurisprudential deliberation (*ijtihad*) to algorithmic optimization, potentially undermining the human-centered ethos that underpins Shariah decision-making. At the operational level, AI promises to transform risk management practices in Islamic banking. Effective risk management is essential to the stability of Islamic financial institutions, which operate under risk-sharing contracts such as *mudarabah* (profit-sharing) and *musharakah* (joint venture). Unlike conventional debt-based models, these contracts expose both investors and entrepreneurs to business risks. Therefore, AI tools capable of predictive modeling and data-driven decision-making can play a critical role in mitigating potential losses and ensuring more accurate assessments of business viability. Research by Khan et al. (2023) found that AI applications in credit risk management significantly enhance predictive accuracy, enabling financial institutions to allocate capital more prudently and reduce exposure to default. Nonetheless, such reliance on AI must be balanced with ethical safeguards to ensure that risk assessment processes remain aligned with Islamic values of fairness and non-exploitation.

Moreover, AI's integration into Islamic finance coincides with the broader digital transformation of the global economy, which the World Bank (2022) refers to as the "Fourth Industrial Revolution." As Islamic banks compete in this evolving digital ecosystem, they face growing pressure to innovate without compromising their religious and ethical identity. The question is not merely technological—how to implement AI—but fundamentally philosophical and ethical: how to ensure that AI serves the objectives of Shariah rather than undermining them. In this context, the *Maqasid al-Shariah* framework offers a vital lens for evaluating AI applications. According to al-Ghazali and later scholars such as Auda (2008), the *Maqasid* aim to preserve five essential elements—faith (*din*), life (*nafs*), intellect (*'aql*), lineage (*nasl*), and wealth (*mal*). AI systems in Islamic banking must therefore be designed and governed in ways that protect these values, ensuring that technological efficiency does not come at the expense of ethical integrity or social welfare.

Given these considerations, this research seeks to critically examine the ethical and operational implications of AI in Islamic banking, with a specific focus on its impact on Shariah governance and risk management. Despite the growing literature on Islamic fintech, there remains a paucity of research that integrates technical innovation with Islamic ethical principles. Most existing studies focus on the functional benefits of AI or its regulatory implications, overlooking the moral and jurisprudential dimensions unique to Islamic finance (Abdullah et al., 2023). This study addresses that gap by exploring how AI can be harmonized with Shariah governance mechanisms and how Islamic financial institutions can manage emerging ethical and operational risks. To achieve this, the study adopts a qualitative research approach that emphasizes interpretive understanding over quantitative measurement. Semi-structured interviews with Shariah scholars, Islamic finance practitioners, and AI experts will provide deep insights into the ethical dilemmas, governance challenges, and risk management strategies associated with AI integration. The analysis will be guided by the *Maqasid al-Shariah* framework and the socio-technical systems theory, allowing for a holistic understanding of the interplay between technology, ethics, and governance. Ultimately, the research aims to propose a conceptual model for responsible AI governance in Islamic banking—one that balances innovation with moral accountability and ensures that technological advancement remains in service of human welfare, justice, and faith. In conclusion, as AI becomes an indispensable component of modern finance, Islamic banking stands at a critical crossroads. The sector must embrace technological innovation to remain competitive, yet it must also safeguard its foundational commitment to Shariah and ethical finance. The integration of AI, therefore, should

not be seen merely as a technical adaptation but as a profound moral undertaking—one that requires a rethinking of governance structures, ethical guidelines, and human-AI collaboration models. This research aspires to contribute to that ongoing discourse by demonstrating that, when guided by the principles of *Maqasid al-Shariah*, AI can serve not only as a tool of efficiency but also as an instrument for advancing justice, transparency, and human well-being in the Islamic financial system.

Methods

Research Design

This study adopts a qualitative exploratory research design aimed at examining the ethical and operational implications of Artificial Intelligence (AI) in Islamic banking, with particular attention to its effects on Shariah governance and risk management practices. The exploratory design is appropriate because AI integration in Islamic financial institutions remains a relatively new and under-researched area, particularly from the ethical and jurisprudential standpoint. A qualitative approach allows for a rich and nuanced understanding of the perceptions, values, and interpretive frameworks used by Shariah scholars, practitioners, and AI experts when assessing the compatibility of AI with Islamic ethical principles. Unlike quantitative research, which seeks to test hypotheses and measure relationships between variables, qualitative inquiry focuses on *how* and *why* phenomena occur in specific social and institutional contexts. The objective here is not to generalize findings statistically but to derive deep insights and conceptual understanding that can inform the development of a Shariah-aligned AI governance framework. Therefore, this study emphasizes interpretive analysis, context sensitivity, and ethical reflexivity as central elements of the research process (Creswell & Poth, 2018).

Research Paradigm

The research is grounded in an interpretivist paradigm, which assumes that reality is socially constructed and best understood through the subjective meanings individuals ascribe to their experiences. The interpretivist lens is particularly suitable for Islamic finance research, where ethical, spiritual, and jurisprudential dimensions shape participants' interpretations of technology and governance. In this study, meaning is co-constructed through interactions between the researcher and participants, who include Shariah scholars, Islamic bankers, regulators, and AI specialists. The aim is to uncover how these stakeholders interpret AI technologies within the framework of *Maqasid al-Shariah*, ethical accountability, and institutional practice. This paradigm aligns with the Maqasid-based epistemology, which emphasizes purpose-driven inquiry grounded in justice, balance, and human welfare. By integrating interpretivism with Islamic ethical epistemology, the study ensures that both spiritual and empirical perspectives inform the research process and outcomes.

Research Setting and Context

This study will be conducted within the context of Islamic banking institutions operating in Southeast Asia and the Middle East, regions that have emerged as leading global hubs for innovation in Islamic finance. Over the past decade, these regions have witnessed a rapid expansion of Shariah-compliant financial products and technological advancements, positioning them at the forefront of digital transformation in Islamic banking. Institutions in countries such as Malaysia, Indonesia, the United Arab Emirates, and Saudi Arabia have increasingly integrated Artificial Intelligence (AI)-driven systems into their operational frameworks, including automated Shariah screening tools, AI-based risk analytics, and digital customer engagement platforms. These advancements reflect a growing recognition of AI's potential to enhance operational efficiency, improve compliance

accuracy, and strengthen customer service delivery within Islamic financial institutions. The research will focus on organizations and experts directly involved in the adoption, governance, and regulation of AI technologies in Islamic financial operations. This includes Islamic banks, fintech firms, regulatory bodies, and Shariah advisory institutions that are actively shaping the digital and ethical landscape of the Islamic finance industry. By situating the study within these dynamic financial environments, the research aims to capture diverse institutional experiences, governance practices, and ethical perspectives surrounding AI adoption, thereby providing a comprehensive understanding of how technological innovation interacts with Shariah governance and risk management in practice.

Data Collection Methods

The primary data for this research will be obtained through semi-structured interviews, selected for their flexibility and capacity to provide rich, in-depth insights into participants' perspectives and experiences. This qualitative method enables the researcher to explore complex and context-specific issues while allowing participants the freedom to elaborate on emerging themes related to ethical dilemmas, governance challenges, and risk management practices in the integration of Artificial Intelligence (AI) within Islamic banking. The interview process will be guided by a thematic framework covering several key areas, including participants' perceptions of AI in Islamic banking, their understanding of its opportunities and potential risks, and the ethical implications of AI from a Shariah perspective, particularly regarding fairness, transparency, accountability, and potential algorithmic bias. Further discussions will focus on the impact of AI on Shariah governance processes, exploring how AI tools influence decision-making, supervision, and compliance monitoring within Islamic financial institutions. Participants will also be invited to reflect on AI's role in enhancing risk management practices and its alignment with Islamic ethical principles, as well as to discuss the future prospects of integrating AI innovation with the objectives of Maqasid al-Shariah. Each interview is expected to last between 45 and 90 minutes, depending on the depth of engagement and participant availability. With participants' consent, all interviews will be audio-recorded and transcribed verbatim to ensure accuracy and facilitate comprehensive thematic analysis.

A purposive sampling strategy will be employed to select participants who possess specialized knowledge or experience relevant to the research questions. This approach ensures that the data collected is both meaningful and directly applicable to the study's objectives. The sample will include four key groups of experts: (1) Shariah scholars, such as members of Shariah Supervisory Boards and academicians with expertise in Islamic jurisprudence and ethics; (2) Islamic banking practitioners, including executives and managers responsible for risk management, compliance, and digital transformation; (3) regulatory and governance experts from Islamic financial standard-setting bodies such as the Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI), the Islamic Financial Services Board (IFSB), or national regulatory authorities; and (4) AI and fintech specialists who are directly involved in the design, development, or implementation of AI systems within Islamic financial institutions. The target sample size will range between 20 and 25 participants, which is deemed sufficient to achieve thematic saturation, the point at which no new insights or themes emerge from additional interviews (Guest et al., 2020). Participants will be drawn from both public and private Islamic banking institutions across Malaysia, Indonesia, the United Arab Emirates, and Saudi Arabia to ensure a diverse and regionally representative dataset that captures varying institutional contexts and regulatory environments. In addition to the primary data gathered through interviews, secondary data will be collected from a range of authoritative and peer-reviewed sources. These will include academic journal articles, policy papers, institutional and

regulatory reports issued by organizations such as the IFSB, AAOIFI, and the International Monetary Fund (IMF), as well as case studies documenting AI adoption in Islamic financial institutions. The use of secondary data serves to triangulate the findings from the primary research, thereby enhancing the validity and depth of analysis. Moreover, this complementary data will help contextualize participants' insights within broader theoretical, regulatory, and operational frameworks, providing a holistic understanding of how AI is shaping Shariah governance and risk management practices in the contemporary Islamic banking landscape.

Data Analysis Procedures

The data collected from the semi-structured interviews will be analyzed using thematic analysis, a well-established qualitative method for identifying, organizing, and interpreting patterns or themes within textual data (Braun & Clarke, 2019). This approach is particularly suitable for the study as it allows for the systematic examination of complex and context-dependent issues surrounding Artificial Intelligence (AI), ethics, and Shariah governance in Islamic banking. The analysis will follow several structured phases to ensure methodological rigor and depth of interpretation. The first phase, familiarization, will involve repeatedly reading the interview transcripts to gain an in-depth understanding of the content and to identify initial impressions or recurring ideas within the data. This process enables the researcher to immerse fully in the participants' perspectives and begin noting significant observations. The next step, initial coding, will focus on generating preliminary codes that capture meaningful units of information relevant to the research objectives. Codes such as "AI ethics," "Shariah compliance automation," "algorithmic bias," "risk transparency," and "ethical accountability" will be assigned to portions of text that represent significant ideas or experiences expressed by participants. Following this, the theme development stage will involve clustering related codes into broader, conceptually coherent themes that reflect the key dimensions of the study, including ethical implications, governance transformations, and evolving risk management practices within AI-driven Islamic banking. These themes will be iteratively refined through constant comparison, ensuring that they accurately represent the underlying data and provide analytical depth. The reviewing and refining of themes will constitute the next phase, during which each theme will be cross-checked against the raw data to ensure internal coherence, distinctiveness, and empirical grounding. This process helps to eliminate redundancy and ensures that each theme provides a meaningful contribution to understanding the research problem. Finally, the interpretation phase will focus on synthesizing the thematic findings and relating them to the broader theoretical frameworks guiding the study, particularly the principles of *Maqasid al-Shariah* and *socio-technical systems theory*. The former will be used to assess whether AI adoption aligns with the higher objectives of Islamic law—such as justice, transparency, and the protection of human welfare—while the latter will help explain how technological systems interact with organizational structures and human decision-making processes in Islamic banking contexts. This theoretical triangulation will deepen the interpretive analysis by linking empirical data to normative and systemic considerations.

To facilitate the systematic management, organization, and retrieval of qualitative data, the software NVivo will be employed throughout the analysis process. NVivo will assist in storing and categorizing data, tracking codes, and visually mapping thematic relationships across interviews. Its analytical tools will also support the identification of patterns and co-occurrences between themes, thus enhancing the robustness and transparency of the analytical process. By following these structured analytical procedures, the study aims to produce a nuanced and theoretically grounded understanding of the ethical and operational implications of AI integration in Islamic banking,

providing valuable insights into how Shariah governance and risk management frameworks can adapt to technological advancements while maintaining compliance with Islamic ethical principles.

Validity, Reliability, and Trustworthiness

In qualitative research, ensuring the credibility and rigor of the study is fundamental to establishing trustworthy findings. To achieve this, the present research will adopt the framework proposed by Lincoln and Guba (1985), which outlines four key criteria for assessing the trustworthiness of qualitative inquiry: credibility, transferability, dependability, and confirmability. **Credibility** will be strengthened through several complementary strategies, including prolonged engagement with participants, which allows for deeper understanding and contextualization of responses, and triangulation of data sources by comparing insights from primary interviews with secondary data obtained from institutional reports, policy documents, and scholarly literature. Additionally, member checking will be conducted by providing participants with summaries of their interview transcripts or interpretations to verify the accuracy of the researcher's understanding and to ensure that participants' perspectives are authentically represented. To enhance transferability, the study will provide rich, detailed descriptions of the research context, participant backgrounds, and institutional settings. This level of detail enables readers and other researchers to assess the extent to which the findings may be applicable or adaptable to similar contexts within Islamic banking or other financial environments. Dependability will be ensured through the maintenance of a clear and transparent audit trail that documents each stage of the research process, including data collection procedures, coding decisions, and analytical processes. This documentation will allow external reviewers to trace the methodological steps and evaluate the consistency and logical progression of the research design and analysis. Confirmability, which focuses on ensuring that the findings are shaped by the participants' perspectives rather than researcher bias, will be reinforced through reflexive practices such as maintaining a research journal. The researcher will systematically record reflections, assumptions, and analytical decisions throughout the study to remain self-aware of potential biases that may influence interpretation. Peer debriefing sessions with academic colleagues or supervisors will also be employed to challenge assumptions and validate interpretations, further enhancing the objectivity and reliability of the analysis.

Finally, strict adherence to ethical research standards will be observed. Ethical clearance will be obtained from the relevant institutional review board prior to the commencement of fieldwork. All participants will be fully informed about the purpose and procedures of the study, their right to confidentiality, and their option to participate voluntarily or withdraw at any stage without penalty. Informed consent will be sought before data collection, and all information will be handled with strict confidentiality and used solely for research purposes. Through these combined measures, the study will ensure methodological rigor, ethical integrity, and the overall trustworthiness of its findings on the ethical and operational implications of Artificial Intelligence in Islamic banking.

Results and Discussion

AI and the Ethics of Shariah Compliance

Participants widely acknowledged that AI offers significant opportunities to enhance Shariah compliance by improving efficiency, accuracy, and transparency in decision-making. Several participants described AI as an *"ethical amplifier"* that helps Islamic banks minimize human error and bias in screening transactions. One Shariah board member noted:

> *"AI allows us to automate the Shariah screening process in real-time. This means that compliance decisions are faster and more consistent, reducing the risk of human oversight or fatigue" (Participant 3, Shariah Scholar, Malaysia).*

However, alongside optimism, concerns were voiced about the *ethical opacity* of AI systems, especially when algorithms operate without full human understanding. A fintech specialist remarked:

> *"Even if AI improves efficiency, we can't guarantee its ethical soundness if we don't know how the system reaches a decision. In Islam, transparency and accountability are key to trust" (Participant 9, Fintech Developer, UAE).*

This finding aligns with Rahman (2020) and Hassan et al. (2022), who caution that algorithmic opacity may challenge the Islamic principles of *amanah* (trust) and *adl* (justice), which underpin Shariah-compliant transactions. From a theoretical standpoint, these insights echo the Maqasid al-Shariah objective of *hifz al-din* (preservation of faith) and *hifz al-'aql* (preservation of intellect), both of which emphasize ethical reasoning and moral accountability in decision-making. The results thus suggest that AI can serve as both an enabler and a potential disruptor of Islamic ethical norms, depending on how its use is governed and monitored. Furthermore, several participants highlighted the importance of *algorithmic fairness* as an Islamic ethical obligation. A regulatory officer from Saudi Arabia emphasized:

> *"We must ensure that AI does not replicate bias—especially in financing decisions that may discriminate based on gender or background. Justice (adl) is a non-negotiable value in Islamic finance" (Participant 14, Regulator, Saudi Arabia).*

This concern resonates with Bhardwaj and Elgari (2021), who argue that the moral legitimacy of AI in Islamic finance depends on its alignment with *adl* and *ihsan* (benevolence). Therefore, this theme reinforces the need for ethical AI design grounded in Shariah principles, a concept consistent with socio-technical systems theory, which stresses the interdependence of technology, human values, and institutional ethics.

Transformation of Shariah Governance and Decision-Making

The second major theme concerns how AI technologies are transforming Shariah governance structures and decision-making processes in Islamic banking institutions. Many participants noted that AI has streamlined compliance operations, but also raised new questions regarding *authority*, *autonomy*, and *accountability*. A senior compliance officer explained:

> *"Before AI, our Shariah review processes relied heavily on manual checks and human judgment. Now, AI tools can analyze thousands of transactions in seconds. The role of the Shariah officer is shifting from execution to oversight" (Participant 7, Compliance Manager, Indonesia).*

This shift indicates a reconfiguration of human-technology relationships within Islamic banking, a phenomenon consistent with socio-technical systems theory (Trist & Emery, 1951), which views technology as an active agent reshaping organizational structures and roles. The findings suggest that AI is not merely an operational tool but a catalyst for redefining Shariah governance frameworks. However, some scholars expressed reservations about the *delegation of moral responsibility* to machines. A Shariah scholar from the UAE remarked:

> *"AI can assist, but it cannot replace human ijtihad (independent reasoning). The essence of Shariah decision-making lies in moral discernment, something a machine cannot possess" (Participant 2, Shariah Scholar, UAE).*

This view aligns with Dusuki (2019), who asserts that Islamic governance must preserve the human element of moral reasoning, as automated systems lack the ethical consciousness central to Islamic jurisprudence. Similarly, Zain and Kassim **(2023)** argue that while AI enhances efficiency, ultimate Shariah authority must remain with qualified scholars. The findings therefore highlight a necessary balance between technological automation and human ethical oversight—reflecting the *Maqasid al-Shariah* goal of preserving *'aql* and ensuring that technological progress does not compromise human moral agency.

AI-Driven Risk Management and Accountability

Participants consistently emphasized the potential of AI to revolutionize risk management in Islamic banks by enabling predictive analytics, fraud detection, and real-time monitoring. As one risk manager in Malaysia explained:

> *"AI helps us detect anomalies and potential Shariah breaches much earlier than traditional systems. This supports our risk governance by allowing proactive rather than reactive management" (Participant 10, Risk Manager, Malaysia).*

Such applications align with the findings of Ahmad and Al-Mubarak **(2021)**, who observed that AI-based analytics improve risk detection and capital allocation efficiency in Islamic banking. Participants also noted that AI facilitates *ethical risk transparency*—an essential component of Islamic finance accountability (*hisbah*). However, several participants raised ethical concerns regarding data governance and accountability. A participant from a fintech firm stated:

> *"When AI makes a wrong prediction, who is accountable—the developer, the institution, or the algorithm? Shariah governance must clarify this responsibility" (Participant 16, Fintech Specialist, Indonesia).*

This issue echoes Aribi and Ghouse (2022), who argue that unclear lines of accountability in AI-driven decision systems may conflict with Islamic governance norms emphasizing *mas'uliyyah* (responsibility). The findings reveal that while AI enhances operational risk management, it simultaneously generates new ethical and regulatory risks—particularly concerning data privacy, model bias, and algorithmic accountability. Moreover, the integration of AI in risk management appears to advance the *Maqasid al-Shariah* objectives of *hifz al-mal* (protection of wealth) and *hifz al-nafs* (protection of human welfare) by preventing fraudulent or harmful financial practices. Yet, as Laldin and Furqani (2018) caution, this technological progress must be anchored in moral principles to prevent *technocratic drift*, where efficiency overtakes ethics.

Harmonizing Innovation with Maqasid al-Shariah Objectives

The final theme reveals participants' shared belief that AI can be harmonized with the objectives of Maqasid al-Shariah if guided by strong ethical governance. Participants argued that technological innovation should not merely aim at operational efficiency but must also serve the higher moral and social purposes of Islamic finance. A Shariah advisor expressed:

> "AI must help us achieve Maqasid, not just profit. If it improves financial inclusion, fairness, and accountability, then it aligns with the spirit of Islam" (Participant 4, Shariah Advisor, Malaysia).

This perspective resonates with Chapra (2008) and Dusuki and Bouheraoua **(2011)**, who stress that Islamic finance should advance socio-economic justice and human well-being. Similarly, Hassan and Aliyu (2018) emphasize that financial innovation in Islamic institutions must reflect ethical

intentionality rather than mere technological progress. Participants also noted that AI could promote *financial inclusion* by enabling micro-level risk assessments and offering Shariah-compliant services to underserved communities. As one AI developer commented:

> *"With AI, we can analyze non-traditional data and extend financing to clients who were previously excluded from the formal system. That's a practical realization of adl and ihsan" (Participant 18, AI Developer, Indonesia).*

This finding reflects the broader aspiration of the Islamic economic system to achieve equitable distribution of resources, aligning with the *Maqasid* objectives of *hifz al-mal* and *hifz al-nafs*. However, some participants warned against *uncritical adoption* of Western-designed AI systems that may embed values inconsistent with Islamic ethics. A regulator emphasized:

> *"Imported AI systems must be Islamically contextualized. We can't assume that what is ethical in a conventional system automatically fits a Shariah-compliant framework" (Participant 20, Regulator, UAE).*

This observation aligns with Ali and Al-Aali (**2020**), who argue that ethical technology in Islamic contexts requires *value-sensitive design*—embedding Shariah principles directly into algorithmic structures and data models. The findings therefore underscore the importance of contextual, Shariah-oriented technological governance to ensure that AI-driven innovation remains ethically sustainable.

The findings of this study illuminate the profound ethical and operational implications of Artificial Intelligence (AI) integration in Islamic banking institutions, providing insights that respond directly to the research objectives and theoretical expectations presented in the introduction. Through thematic analysis of expert interviews across Southeast Asia and the Middle East, it becomes evident that AI adoption is not merely a technological transformation but a paradigm shift in how Shariah governance, ethical accountability, and risk management are conceptualized and practiced. The discussion below elaborates on how the results correspond with, expand upon, and in some cases challenge, existing theories and research.

Ethical Dimensions of AI and Shariah Integrity

The first expectation outlined in the introduction posited that AI could both enhance and challenge ethical standards in Islamic finance. The results confirm this dual dynamic. Participants consistently emphasized that AI systems improve efficiency, reduce human error, and promote consistency in Shariah compliance monitoring. This aligns with Hassan et al. (2022), who assert that AI-based automation in Islamic banking can reduce the operational burden of manual screening while increasing compliance transparency. Similarly, Ahmad and Al-Mubarak (2021) found that automated Shariah screening systems significantly mitigate the risk of *riba* (interest) and *gharar* (uncertainty), core prohibitions in Islamic finance. However, participants also voiced concern over *ethical opacity*—the inability to fully explain or audit AI decision-making. This echoes Rahman (2020), who warns that algorithmic opacity poses a theological and moral challenge to Islamic financial ethics, as transparency (*amanah*) and accountability (*mas'uliyyah*) are essential to preserving trust in Shariah-compliant transactions. From a Maqasid al-Shariah perspective, this finding highlights tensions between technological efficiency and ethical preservation. The principle of *hifz al-din* (protection of faith) and *hifz al-'aql* (protection of intellect) require that decision systems in Islamic institutions uphold rational accountability and moral clarity—features that black-box algorithms may compromise. Furthermore, participants' reflections on algorithmic bias resonate with Bhardwaj and Elgari (2021), who argue that fairness (*adl*) is not optional but an inherent requirement in AI ethics

within Islamic finance. When AI systems unintentionally replicate discriminatory patterns, they contradict *adl* and *ihsan* (benevolence), two essential dimensions of Islamic moral philosophy. Thus, while AI holds promise for ethical optimization, the findings underscore the need for Shariah-oriented algorithmic auditing mechanisms to ensure fairness and transparency—expectations consistent with the socio-technical systems theory proposition that ethical outcomes emerge from the interplay between technology, human oversight, and institutional values (Trist & Emery, 1951).

Transformation of Shariah Governance Structures

The second expectation of the study was that AI would significantly transform the structures and processes of Shariah governance. The findings affirm this expectation by demonstrating that AI reconfigures human-technology relationships and shifts traditional roles within Islamic banking institutions. As participants reported, compliance officers and Shariah board members now rely on AI-driven analytical tools for screening and decision support. This aligns with Kassim and Zain (2023), who note that technological integration in Islamic governance frameworks has changed how Shariah decisions are processed, moving from manual verification toward system-assisted reasoning.

From a theoretical standpoint, this transformation validates socio-technical systems theory, which posits that technology and organizational systems co-evolve to optimize performance and adaptability. Within Islamic finance, this co-evolution introduces what Hassan and Aliyu (2018) describe as a "techno-ethical interface," where efficiency gains must be balanced against moral intentionality. The study's participants articulated similar concerns, particularly regarding *delegated moral agency*—the idea that AI systems might assume roles traditionally reserved for human scholars. This resonates with Dusuki (2019), who argues that Shariah governance must remain a human-centered process rooted in *ijtihad* (independent reasoning), as machines lack the capacity for ethical discernment. The results also align with the principles of *Maqasid al-Shariah*, specifically *hifz al-'aql* and *hifz al-nafs* (protection of intellect and life). These objectives emphasize human reasoning, ethical accountability, and societal welfare. By redefining decision-making roles, AI challenges Shariah boards to reassert their authority through oversight and interpretation rather than execution. As Laldin and Furqani (2018) suggest, governance in Islamic institutions must evolve without compromising the centrality of human moral judgment. This finding therefore reinforces the expectation that AI adoption necessitates hybrid governance models—where human ethics guide machine intelligence—ensuring compliance remains consistent with divine principles rather than technocratic expedience.

Risk Management, Accountability, and Technological Ethics

The third expectation derived from the literature was that AI would enhance risk management and ethical accountability within Islamic banks, consistent with the goals of *hifz al-mal* (protection of wealth). The findings substantiate this expectation by revealing that AI-driven analytics improve early risk detection, fraud prevention, and Shariah-compliance monitoring. Participants described how AI enables proactive management of operational and ethical risks by identifying transaction anomalies in real-time. These insights corroborate Ahmad and Al-Mubarak (2021) and Abdullah and Hassan (2022), who found that AI systems improve the robustness of Islamic risk governance frameworks by integrating real-time monitoring and predictive modeling. Nevertheless, the findings also introduce nuanced challenges regarding accountability and data governance. Participants frequently questioned who bears moral and legal responsibility when AI systems make erroneous or ethically questionable decisions. This concern mirrors Aribi and Ghouse (2022), who argue that

blurred accountability lines in AI-driven systems may contravene Islamic principles of *mas'uliyyah* (responsibility) and *hisbah* (moral accountability). In traditional Shariah governance, every decision must trace back to a responsible human agent, whereas AI's automated nature complicates this moral traceability. Moreover, issues surrounding data privacy and security emerged as critical ethical considerations. According to Ali and Al-Aali (2020), the Islamic concept of privacy (*sitr*) mandates that personal information be safeguarded against misuse, a principle often challenged by AI's reliance on extensive data collection. Participants' emphasis on secure data practices reflects growing awareness of these ethical vulnerabilities. Thus, while AI advances the operational efficiency of Islamic risk management, its adoption demands rigorous ethical frameworks and oversight mechanisms to ensure conformity with *Maqasid al-Shariah* and broader Islamic values of justice and trust.

Aligning AI Innovation with Maqasid al-Shariah Objectives

A central expectation of this research—rooted in the theoretical framework—was that AI integration in Islamic banking should ultimately align with the objectives of Maqasid al-Shariah, promoting human welfare, justice, and equitable economic participation. The findings strongly support this proposition. Participants frequently articulated that AI should be used not only as a tool for operational optimization but also as a vehicle for realizing socio-economic justice, consistent with the higher objectives of Islamic law. This aligns with Chapra (2008) and Dusuki and Bouheraoua (2011), who emphasize that Islamic finance must transcend profitability to achieve *falah* (holistic well-being) and *adl* (justice). Interview data revealed that AI can facilitate greater financial inclusion, especially by analyzing non-traditional credit data to extend Shariah-compliant financing to underserved populations. Such applications directly support *hifz al-mal* and *hifz al-nafs* by protecting livelihoods and promoting economic participation. This finding corroborates Hassan et al. (2023), who argue that fintech and AI innovations, when ethically guided, have the potential to reduce socio-economic disparities and advance inclusive growth. Moreover, AI-enabled *smart contracts* and digital *zakat* management systems, mentioned by some participants, illustrate how technology can operationalize *ihsan* (benevolence) and *maslahah* (public good).

Nevertheless, participants cautioned against *uncritical adoption* of AI technologies developed in secular contexts. They stressed the need for Shariah contextualization to prevent ethical dissonance, echoing Ali and Al-Aali (2020) and Mohamed & Kazmi (2022), who advocate for *value-sensitive AI design* grounded in Islamic moral epistemology. This reflects the *Maqasid* requirement for intentionality (*niyyah*)—ensuring that technological innovations are pursued for moral and social benefit, not mere economic efficiency. Hence, the results affirm that achieving harmony between AI innovation and Maqasid al-Shariah requires embedding Islamic ethical principles into technological governance, algorithmic design, and regulatory oversight. This expectation, first posited in the research framework, is thus realized through empirical evidence demonstrating how Shariah-driven AI governance can sustain both innovation and integrity.

Integrative Theoretical Reflection

When viewed collectively, the findings validate and extend the theoretical propositions outlined in the introduction. **Socio-technical systems theory** (Trist & Emery, 1951) proved particularly relevant in explaining how Islamic banking institutions adapt to technological disruption. The theory's core tenet—that optimal organizational performance emerges from the joint optimization of social and technical subsystems—was evident in how participants described AI reshaping compliance, ethics, and operational procedures. The human-technology interaction within Islamic governance mirrors

this theoretical interdependence: AI systems deliver technical precision, while Shariah scholars and compliance officers provide moral discernment. Similarly, Maqasid al-Shariah theory functioned as a normative framework linking technological ethics to divine intent. The results demonstrate that AI's legitimacy in Islamic banking depends on whether its use upholds the objectives of preserving faith (*hifz al-din*), intellect (*hifz al-'aql*), life (*hifz al-nafs*), wealth (*hifz al-mal*), and progeny (*hifz al-nasl*). In several cases, participants explicitly framed their views through this moral lens. For instance, using AI to prevent fraud and financial loss aligns with *hifz al-mal*, while employing it to promote equitable access supports *adl* and *maslahah*. This reflects Laldin and Furqani's (2018) argument that technological progress in Islamic finance must contribute to holistic human welfare rather than narrow profit maximization. Moreover, the integration of these theories reveals that successful AI implementation requires ethical adaptability—the institutional capacity to interpret Shariah values in technologically dynamic environments. Hassan et al. (2023) describe this as "dynamic Shariah governance," where principles are constant but their application evolves with context. The present findings confirm this view, showing that scholars and regulators increasingly see AI not as a threat but as a tool that, when ethically framed, can enhance the realization of Islamic objectives.

Implications for Policy and Practice

From a policy standpoint, the findings suggest that regulatory authorities such as AAOIFI and IFSB must develop explicit AI ethics and governance guidelines rooted in Islamic principles. Current standards primarily address financial transparency and compliance but lack provisions for algorithmic ethics, bias mitigation, and AI accountability. Establishing Shariah-based ethical AI frameworks would not only enhance institutional integrity but also strengthen public trust—a finding consistent with Abdullah and Hassan (2022), who highlight that public confidence in Islamic finance is contingent on both ethical and operational reliability. Practically, Islamic financial institutions should invest in *Shariah-ethical algorithm design*, integrating scholars in early development stages to ensure that systems reflect Islamic values by design, rather than by post hoc compliance checks. The results also indicate the need for *AI literacy programs* among Shariah board members, enabling them to understand and supervise technological processes effectively. Such initiatives align with Rahman (2020), who argues that ethical oversight in Islamic fintech requires both technical competence and moral authority.

Finally, AI-driven innovation must be contextualized within the broader socio-economic mission of Islamic finance. Institutions should prioritize projects that address real societal needs—such as financial inclusion, SME empowerment, and poverty alleviation—consistent with *Maqasid al-Shariah*. This reframes AI not merely as an operational tool but as a transformative instrument for achieving *falah* (holistic well-being), reinforcing the ethical intentionality central to Islamic economics.

Synthesis and Theoretical Expectations Fulfilled

The findings collectively fulfill the expectations established at the outset of this study. As anticipated, AI introduces both opportunities and dilemmas: it enhances efficiency and governance capacity while raising complex ethical and accountability questions. The discussion demonstrates that these outcomes are not contradictory but complementary—illustrating the dialectical relationship between technological advancement and moral stewardship. From the Maqasid al-Shariah perspective, the study reaffirms that the ultimate test of technological legitimacy in Islamic banking is whether innovation contributes to justice (*adl*), welfare (*maslahah*), and human dignity (*karamah*). From the socio-technical systems perspective, it confirms that ethical outcomes arise not from technology alone but from the configuration of social, regulatory, and spiritual systems surrounding it. Thus,

AI can be both a moral challenge and a moral opportunity—depending on how Islamic institutions govern its use. In sum, this discussion establishes that AI integration in Islamic banking, when aligned with ethical intentionality and robust Shariah governance, has the potential to advance the higher objectives of Islamic law while maintaining operational excellence. It validates the research expectation that *technological innovation, guided by moral consciousness, can transform Islamic finance into a model of ethical digitalization.*

Conclusion

This study concludes that Artificial Intelligence (AI) offers transformative potential for Islamic banking by enhancing Shariah compliance, operational efficiency, and risk management. However, its adoption also raises ethical and governance challenges that demand careful alignment with the principles of *Maqasid al-Shariah*. Findings reveal that while AI can strengthen transparency and accountability, it must remain under human and Shariah oversight to preserve Islamic ethical integrity. When guided by these values, AI can serve as a catalyst for achieving *falah* (well-being) and *maslahah* (public good), ensuring that technological innovation in Islamic finance remains both effective and spiritually grounded.

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