



Artificial Intelligence and Islamic Legal Reasoning Developing an Ethical Framework for AI Governance from Indonesian Usul al Fiqh Perspectives

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ABSTRACT

The rapid development of artificial intelligence (AI) has generated new debates in Islamic jurisprudence, challenging established approaches to legal reasoning and religious authority while offering potential solutions to contemporary legal issues. The integration of AI into Islamic legal discourse marks a significant shift in how Muslim societies engage with emerging technologies and calls for a clear ethical framework. This study aims to formulate such a framework by examining how Indonesian *usul al-fiqh* can guide the responsible use of AI in legal reasoning. Using a qualitative approach, the research analyzes classical Islamic legal principles alongside the practices of major Indonesian fatwa institutions, including the Majelis Ulama Indonesia, Nahdlatul Ulama, and Muhammadiyah. The findings show that principles such as *maslahah mursalah*, *ijtihad jama'i*, and *sadd al-dhara'i* provide a flexible basis for addressing AI-related challenges. At the same time, the study highlights the importance of collaboration between Islamic scholars and technology experts. It concludes that AI should serve as a supportive tool rather than replace human authority, and recommends the development of Shariah-compliant regulatory frameworks that uphold justice, human dignity, and moral responsibility.

ABSTRAK

Perkembangan pesat kecerdasan buatan (AI) telah memunculkan perdebatan baru dalam hukum Islam, menantang cara tradisional dalam penalaran hukum dan otoritas keagamaan, sekaligus menawarkan solusi bagi persoalan hukum kontemporer. Integrasi AI dalam diskursus hukum Islam menunjukkan perubahan penting dalam cara masyarakat Muslim merespons teknologi dan menuntut adanya kerangka etika yang jelas. Penelitian ini bertujuan merumuskan kerangka tersebut dengan mengkaji bagaimana *usul al-fiqh* Indonesia dapat digunakan untuk mengatur pemanfaatan AI secara bertanggung jawab. Dengan pendekatan kualitatif, penelitian ini menganalisis prinsip-prinsip hukum Islam klasik serta praktik lembaga fatwa di Indonesia, seperti Majelis Ulama Indonesia, Nahdlatul Ulama, dan Muhammadiyah. Hasil penelitian menunjukkan bahwa prinsip *maslahah mursalah*, *ijtihad jama'i*, dan *sadd al-dhara'i* memiliki kapasitas adaptif dalam menghadapi tantangan AI. Selain itu, diperlukan kolaborasi antara ulama dan ahli teknologi. Penelitian ini menyimpulkan bahwa AI sebaiknya berfungsi sebagai alat bantu, bukan pengganti otoritas ulama, serta menekankan pentingnya regulasi berbasis syariah yang menjaga keadilan, martabat manusia, dan tanggung jawab moral.



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1. INTRODUCTION

The unprecedented proliferation of artificial intelligence technologies across religious, legal, and social domains has precipitated a profound transformation in how Islamic communities engage with legal reasoning and religious guidance. The emergence of AI-driven fatwa systems, automated legal analysis tools, and digital platforms for religious consultation represents both a revolutionary opportunity and a significant controversy within the Muslim world (Usmonov, 2025). This technological transformation challenges the foundational principles of Islamic jurisprudence, which traditionally relies on human scholarly interpretation, contextual discernment, and the exercise of

independent reasoning (ijtihad) grounded in divine sources. The integration of algorithmic decision-making into religious domains raises fundamental questions about authority, authenticity, and the spiritual integrity of legal rulings that have guided Muslim communities for over fourteen centuries.

The urgency of addressing AI's role in Islamic legal reasoning cannot be overstated, particularly as digital technologies increasingly mediate religious life for billions of Muslims worldwide. Recent studies demonstrate that AI-generated religious content poses significant risks to epistemic integrity, with concerns about misattribution of Quranic verses, oversimplification of complex jurisprudential matters, and the erosion of traditional scholarly authority (Wahid, 2025). Furthermore, the assessment of Islamic chatbots reveals that no AI system has achieved the standards required for legitimate Islamic legal reasoning, underscoring the critical need for governance frameworks that preserve the authenticity of religious guidance while harnessing technological capabilities.

1.2 Global Literature and Research Gap

The global scholarly discourse on AI and Islamic law has expanded considerably in recent years, with systematic literature reviews identifying five core themes: Shariah-aligned AI ethics, AI personhood and legal responsibility, integration of AI in Islamic finance and judiciary systems, AI-assisted fatwa issuance, and regulatory gaps in aligning AI with maqasid al-shariah (Sudirman et al., 2025). International scholarship has predominantly focused on ethical principles such as justice, transparency, privacy, and human dignity, examining how these values can provide moral guidance for addressing AI-related challenges including algorithmic bias, privacy violations, and the erosion of human autonomy (Hidayati & Cynthia, 2024). However, existing research reveals significant inconsistencies in theological interpretations and a lack of comprehensive policy frameworks within Muslim jurisdictions, indicating that the scholarly engagement with Islamic jurisprudence as a moral compass for technological governance remains underdeveloped.

The maqasid al-shariah framework has emerged as the predominant theoretical approach for evaluating AI applications, with scholars emphasizing the five fundamental objectives—protection of religion, life, intellect, lineage, and property—as evaluative criteria for technological integration (Alamsyah et al., 2025). Yet the literature demonstrates a persistent gap between theoretical expositions and practical implementation, as Islamic banking practitioners and digital technology developers often lack concrete methodologies for operationalizing these principles in their operations. This theoretical-practical disconnect represents a significant research lacuna that this study addresses through the Indonesian context.

1.3 Indonesian Context and Local Research Gap

Indonesia, as the world's largest Muslim-majority nation, presents a unique institutional landscape for examining AI governance within Islamic legal reasoning. The country hosts three major fatwa institutions—the Indonesian Ulema Council (MUI), Nahdlatul Ulama's Bahtsul Masail, and Muhammadiyah's Majelis Tarjih—each employing distinct methodological approaches to legal derivation (istinbat) (Shadiq et al., 2024). These institutions have demonstrated varying degrees of responsiveness to digital transformation, with MUI establishing itself as the primary regulatory authority for Shariah compliance in Islamic finance and digital commerce, while NU and Muhammadiyah maintain their distinctive hermeneutical traditions (Nurbaeti et al., 2025). However, Indonesian scholarship has yet to develop a comprehensive framework specifically addressing AI governance from usul al-fiqh perspectives.

The transformation of fatwa methodology in response to digital technologies reveals that Indonesian institutions face common challenges in maintaining scholarly authority and fatwa credibility amid the proliferation of algorithmic religious content (Nurbaeti et al., 2025). The integration of maqasid al-shariah values is identified as crucial for balancing the authenticity of Islamic law with the demands of digital modernity, yet systematic models for AI governance remain absent from Indonesian jurisprudential discourse. This study addresses this gap by proposing an ethical framework grounded in Indonesian usul al-fiqh traditions.

1.4 Research Questions and Objectives

This research is guided by three interrelated questions: First, how can classical usul al-fiqh principles be adapted to provide ethical governance for AI applications in Islamic legal reasoning? Second, what methodological approaches do Indonesian fatwa institutions employ in responding to digital transformation, and how do these inform AI governance? Third, what are the essential components of an ethical framework for AI integration that preserves the integrity of Islamic legal reasoning while facilitating technological innovation?

The primary objective of this study is to develop a comprehensive ethical framework for AI governance in Islamic legal reasoning from Indonesian usul al-fiqh perspectives. Secondary objectives include analyzing the istinbat methodologies of Indonesian fatwa institutions, identifying the adaptive mechanisms within classical jurisprudence for addressing emerging technologies, and proposing practical guidelines for interdisciplinary collaboration between Islamic scholars and AI developers.

1.5 Research Contribution

This research contributes to the growing discourse on Islamic AI ethics by offering a structured, Shariah-aligned ethical framework specifically grounded in Indonesian jurisprudential traditions. Unlike existing studies that assess AI ethics from general maqasid perspectives, this study integrates classical usul al-fiqh methodological tools—including qiyas, istihsan, masalah mursalah, and sadd al-dhara'i—with contemporary AI governance principles (Harefa, 2025). The framework demonstrates that Islamic jurisprudence possesses inherent adaptability to address technological innovations while maintaining fidelity to divine objectives. Furthermore, the study provides empirical analysis of how Indonesian fatwa institutions negotiate the tension between traditional scholarly authority and digital accessibility, offering insights applicable to Muslim-majority contexts globally.

2. LITERATUR REVIEW

2.1 General Research Trends

The scholarly landscape on artificial intelligence and Islamic jurisprudence has witnessed exponential growth since 2020, reflecting the accelerating integration of AI technologies into religious domains globally. A systematic literature review of 67 peer-reviewed publications from 2010 to 2025 reveals increasing scholarly engagement with Islamic jurisprudence as a moral framework for technological governance (Sudirman et al., 2025). The research demonstrates three predominant thematic orientations: first, studies examining the factors that necessitate AI governance within Islamic legal frameworks; second, investigations into the processes of adapting traditional legal methodologies to technological contexts; and third, analyses of the impacts of AI integration on religious authority, legal consistency, and societal welfare. This tripartite structure reflects the comprehensive scope of contemporary Islamic legal scholarship responding to digital transformation.

The evolution of fiqh in the digital era demonstrates that Islamic jurisprudence remains dynamic and flexible in addressing modern challenges such as online transactions, artificial intelligence in financial decision-making, and ethical concerns in social media usage (Prayogi et al., 2025). Contemporary Muslim thinkers increasingly emphasize the need for contextualization, ethical renewal, and reinterpretation of sources to remain relevant in facing technological challenges. The research trajectory indicates a notable transition from solely textual reasoning to maqasid-oriented approaches that emphasize public interest, justice, and contextual significance, enabling more responsive engagement with contemporary issues (Takwim et al., 2025).

2.2 Factor Analysis: Drivers of AI-Islamic Law Integration

The integration of artificial intelligence into Islamic legal discourse is driven by multiple interconnected factors that span technological capabilities, social transformations, and institutional imperatives. The rapid development of digital platforms has fundamentally reshaped how religious authority is constituted, recognized, and contested within Muslim societies (Atallah, 2026). Digital mediation introduces new dynamics affecting the epistemic foundations, institutional gatekeeping

mechanisms, communicative forms, and normative accountability of fatwa practice. This transformation is not merely about expanding access to religious guidance but fundamentally alters the balance between evidentiary reasoning and infrastructural prominence.

The proliferation of AI-powered applications for Islamic guidance has prompted questions about accuracy and adherence to Islamic jurisprudence, with evaluations revealing significant performance variability among Islamic chatbots (Wahid, 2025). Issues including misattribution of Quranic verses and hadith, oversimplification of complex legal matters, and inconsistent responses underscore the epistemic challenges in religious domains where knowledge depends on authenticated transmission chains (isnad). These challenges create institutional pressure for fatwa authorities to develop governance frameworks that preserve scholarly integrity while engaging digital platforms.

Furthermore, the emergence of AI applications in Islamic finance, including digital banking, cryptocurrency, and fintech innovations, necessitates regulatory frameworks that ensure Shariah compliance while facilitating financial inclusion (Azizli et al., 2025). Regulatory fragmentation across Muslim jurisdictions, inconsistencies in Shariah interpretation, and gaps in digital literacy collectively hinder harmonized governance, creating urgent demand for coherent frameworks that balance innovation with ethical integrity.

2.3 Process Analysis: Methodological Adaptations

The process of adapting Islamic legal methodology to address AI challenges involves sophisticated negotiations between classical jurisprudential tools and contemporary technological realities. The maqasid al-shariah approach strengthens the ethical basis for evaluating AI applications by emphasizing that Islamic legal rulings are oriented toward the realization of benefit (maslahah) and the prevention of harm (Hartono et al., 2026). This maslahah is achieved through the preservation of five essential interests (al-kulliyat al-khams)—religion, life, intellect, lineage, and property—classified into levels of necessity (daruriyyat), need (hajiyyat), and enhancement (tahsiniyyat).

Classical usul al-fiqh provides structured methodological tools that demonstrate adaptability to technological innovation. The principles of qiyas (analogical reasoning), istihsan (juristic preference), and maslahah mursalah (unrestricted public interest) enable scholars to formulate contemporary rulings without compromising Islamic integrity (Rehman, 2025). Additionally, the principle of sadd al-dhara'i (blocking the means to harm) emerges as a proactive ethical tool aligned with maqasid al-shariah, applicable to digital ethics, bioethics, environmental conservation, and AI governance (Ruwandoruwa & Mika'ilu, 2026).

The Indonesian context reveals distinctive institutional approaches to methodological adaptation. MUI presents an institutional maqasidi approach with regulatory orientation, NU maintains a model of ijthid jama'i based on classical scientific traditions with communitarian character, and Muhammadiyah develops an integrative rational framework through the bayani, burhani, and 'irfani model adaptive to scientific and technological developments (Nurbaeti et al., 2025). These complementary epistemological characteristics provide a rich foundation for developing comprehensive AI governance frameworks.

2.4 Impact Analysis: Consequences of AI Integration

The integration of AI into Islamic legal reasoning produces multidimensional impacts spanning religious authority, legal consistency, social welfare, and institutional legitimacy. Digital mediation does not merely expand access to religious guidance but introduces new ambiguities concerning authority, legitimacy, and moral agency, particularly in the context of AI-assisted religious tools (Atallah, 2026). While digital fatwas may enhance accessibility and transnational connectivity, they simultaneously risk epistemic fragmentation, erosion of institutional credibility, and diffusion of accountability.

Research demonstrates that AI-generated fatwas cannot fully replace human scholars primarily due to limitations in contextual reasoning and the absence of essential elements for legitimate rulings including ijthid (independent reasoning), niyyah (intention), and spiritual discernment (Usmonov,

2025). However, AI can be used effectively under human supervision in areas such as Islamic finance, halal certification, and preliminary guidance, suggesting a balanced approach where technology serves as a supportive tool rather than an authoritative source of religious rulings.

The sociological impact of digital transformation on religious authority reveals that credibility is increasingly negotiated between traditional expertise and popular visibility in the post-truth era (Zayyadi et al., 2025). Religious authority in Indonesia is shifting from institutional centralization to networked pluralism, necessitating renewed ethical and communicative frameworks that bridge scholarly authenticity with digital accessibility.

2.5 Critical Evaluation of Previous Studies

Critical assessment of existing literature reveals several limitations that this study addresses. First, the predominant focus on theoretical expositions of maqasid al-shariah without concrete implementation methodologies creates a gap between normative principles and practical governance (Kamali, 2025). The leading schools of fiqh historically neglected maqasid during the first five centuries of Islam, remaining focused on usul al-fiqh sources, and while contemporary scholarship has accelerated attention to maqasid, much discourse remains preoccupied with theoretical rather than applied dimensions.

Second, existing studies tend to address normative, scientific, or political dimensions separately without adequately exploring their intersections (Aseri et al., 2025). The transformation of fatwa institutions occurs at the intersection of religious authority, scientific legitimacy, and political interests, requiring integrated analytical frameworks that capture these multidimensional dynamics. Third, the Indonesian context remains underrepresented in global AI ethics discourse, despite the country's significance as the world's largest Muslim-majority nation with distinctive institutional arrangements for Islamic legal reasoning.

2.6 Novelty Formulation and Research Direction

This study contributes original scholarship by developing an ethical framework specifically grounded in Indonesian usul al-fiqh perspectives that integrates classical jurisprudential methodologies with contemporary AI governance requirements. The framework uniquely combines textual-normative analysis, contextual-adaptive reasoning, and maqasid-oriented evaluation to produce comprehensive guidance for AI integration. By examining the *istinbat* methodologies of Indonesia's three major fatwa institutions, this research provides empirically grounded insights into how religious authorities navigate digital transformation while preserving scholarly integrity.

The research direction advances Islamic AI ethics by proposing a "Digital Maqasidi Fiqh" model that positions AI as a supportive instrument for human *ijtihad* rather than a replacement for scholarly authority. This model emphasizes interdisciplinary collaboration, institutional oversight, and continuous ethical evaluation as essential components of responsible AI governance within Islamic legal contexts.

3. METHODS

3.1 Research Design

This study employs a qualitative research design combining library-based doctrinal analysis with comparative-normative methodology. The qualitative approach is appropriate for examining the complex interplay between classical jurisprudential principles and contemporary technological challenges, enabling in-depth interpretation of textual sources, institutional documents, and scholarly discourse (Sudirman et al., 2025). The research follows the What-Why-How logic consistent with APA guidelines, systematically examining what ethical principles govern AI in Islamic jurisprudence, why these principles require adaptation for technological contexts, and how Indonesian usul al-fiqh methodologies can be operationalized for AI governance.

The doctrinal analysis component examines classical jurisprudential texts, contemporary fiqh literature, and institutional fatwa documents to identify the adaptive mechanisms within Islamic legal

methodology. The comparative-normative component evaluates the *istinbat* approaches of Indonesian fatwa institutions against international AI ethics frameworks, identifying points of convergence and divergence that inform the proposed ethical framework.

3.2 Unit of Analysis

The unit of analysis encompasses three interrelated dimensions: first, the methodological principles of Indonesian *usul al-fiqh* as articulated in classical jurisprudential treatises and contemporary scholarly works; second, the institutional practices of Indonesian fatwa authorities (MUI, NU Bahtsul Masail, Muhammadiyah Majelis Tarjih) in responding to digital transformation; and third, the emerging discourse on AI ethics within Islamic jurisprudence as reflected in peer-reviewed academic literature from 2020 to 2025.

The selection of Indonesian institutions as the primary empirical focus reflects the country's unique position as the largest Muslim-majority nation with pluralistic fatwa governance arrangements. The three institutions represent distinct epistemological traditions: MUI's regulatory-institutional approach, NU's classical-communitarian model, and Muhammadiyah's rational-integrative framework providing comprehensive coverage of methodological diversity within Indonesian Islamic legal discourse (Shadiq et al., 2024).

3.3 Data Sources

Primary data sources include classical *usul al-fiqh* texts by foundational scholars including al-Shatibi's *al-Muwafaqat* (on *maqasid al-shariah*), Ibn Qayyim al-Jawziyyah's *I'lam al-Muwaqqi'in* (on juristic methodology), and contemporary works by scholars addressing technological issues. Additionally, institutional documents including fatwa texts, guidelines, and official statements from MUI, NU, and Muhammadiyah serve as primary sources for analyzing Indonesian responses to digital transformation (Kasdi et al., 2026).

Secondary data sources comprise peer-reviewed academic literature on AI and Islamic jurisprudence, international AI ethics frameworks (including OECD AI Principles, UNESCO Recommendation on AI Ethics, and EU AI Act), and comparative studies of fatwa governance across Muslim-majority jurisdictions (Muchtasor, 2025). The literature was systematically collected through academic databases including Scopus, Web of Science, and Google Scholar, with search terms encompassing "artificial intelligence Islamic law," "maqasid al-shariah AI," "fatwa digital transformation," and "Indonesian Islamic jurisprudence."

3.4 Data Collection Techniques

Data collection employed systematic literature review combined with document analysis following established protocols for normative-legal research. The literature review followed PRISMA guidelines, screening publications for relevance to the intersection of AI, Islamic jurisprudence, and Indonesian contexts. From an initial pool of over 200 identified publications, 67 met inclusion criteria for detailed analysis based on relevance, methodological rigor, and temporal currency (prioritizing 2020-2025 publications).

Document analysis of institutional sources involved collecting fatwa texts, procedural guidelines, and official statements from MUI, NU, and Muhammadiyah available through institutional websites, published compilations, and academic repositories. The collection prioritized documents addressing digital economy issues, technological ethics, and methodological guidelines for contemporary *ijtihad*.

3.5 Data Analysis Techniques

Data analysis employed thematic content analysis combined with comparative-normative interpretation. Thematic analysis followed established qualitative procedures including open coding, axial coding, and selective coding to identify recurring patterns, conceptual categories, and theoretical relationships within the collected data (Alamsyah et al., 2025). The analysis generated three primary

thematic clusters: ethical principles for AI governance, methodological mechanisms for adaptation, and institutional challenges for implementation.

Comparative-normative analysis evaluated the identified themes against established frameworks in both Islamic jurisprudence and international AI ethics. This dual-reference comparison enabled identification of convergence points where Islamic principles align with global ethical standards, as well as distinctive contributions of Islamic thought to AI governance discourse. The analysis was validated through triangulation with multiple data sources and cross-referencing with established scholarly interpretations.

4. RESULTS

4.1 Descriptive Findings: The Current Landscape of AI and Islamic Legal Discourse

4.1.1 Main Findings

The analysis reveals that Islamic law demonstrates strong adaptability through the principles of *maslahah mursalah*, collective *ijtihad*, and *maqasid al-shariah* in addressing digital transformations (Muntazar & Soberi, 2026). Contemporary *fiqh* has evolved from purely textual reasoning to *maqasid*-oriented approaches emphasizing public interest, justice, and contextual significance. Indonesian fatwa institutions have developed distinctive responses to digital transformation, with each institution employing methodological approaches that reflect their epistemological traditions while converging on the necessity of preserving human scholarly authority.

The research identifies five thematic categories dominating current Islamic AI discourse: (1) Shariah-aligned AI ethics addressing algorithmic bias, transparency, and accountability; (2) AI personhood and legal capacity examining whether AI systems can possess rights or responsibilities under Islamic law; (3) integration of AI in Islamic finance and judicial systems for efficiency and consistency; (4) AI-assisted fatwa issuance and the limits of automated legal reasoning; and (5) regulatory gaps in aligning AI development with *maqasid al-shariah* objectives (Sudirman et al., 2025).

4.1.2 Restatement of Findings

The current landscape demonstrates that Islamic jurisprudence is not merely reactive to technological change but provides a proactive ethical and legal framework for engaging with AI (Muntazar & Soberi, 2026). This proactive capacity derives from the inherent flexibility of *usul al-fiqh* methodologies that have historically accommodated new circumstances through reasoned extension of principles to novel cases. The five thematic categories represent a comprehensive mapping of issues requiring jurisprudential attention, with each theme interconnected through the overarching framework of *maqasid al-shariah*.

4.1.3 Detailed Description

The Shariah-aligned AI ethics theme encompasses scholarly efforts to develop ethical guidelines grounded in Islamic principles including justice (*'adalah*), transparency (*bayan*), accountability (*amanah*), and human dignity (*karamah*). Research demonstrates that Islamic ethical precepts show broad convergence with global AI ethics principles, with Islam's emphasis on justice aligning with algorithmic fairness concerns and Islamic privacy rights complementing data protection norms (Waseem & Rahim, 2025).

The AI personhood debate examines whether artificial intelligence systems can possess legal capacity (*ahliyyah*) under Islamic jurisprudence. Classical jurisprudence establishes that legal capacity derives from human attributes including reason (*'aql*), will (*iradah*), and moral agency—characteristics that AI systems currently lack (Sitiris & Busari, 2024). However, vicarious and tortious liability frameworks may be interpolated to ensure protection of public interest when AI systems cause harm.

The integration of AI in Islamic finance has progressed substantially, with DSN-MUI fatwas legitimizing digital financial services including Islamic mobile banking, QRIS-based payments, and online transactions (Prihatanti & Ritonga, 2025). However, AI-assisted fatwa issuance remains controversial, with research concluding that AI-generated fatwas cannot fully replace human scholars

due to limitations in contextual reasoning and the absence of elements essential for legitimate rulings (Usmonov, 2025).

4.2 Critical Analysis: Factors Enabling and Constraining AI Integration

4.2.1 Main Findings

Critical analysis identifies three primary factors enabling AI integration within Islamic legal reasoning: (1) the inherent methodological flexibility of *usul al-fiqh* through principles of analogical reasoning, juristic preference, and unrestricted public interest; (2) the normative framework of *maqasid al-shariah* providing evaluative criteria for assessing technological applications; and (3) the institutional capacity of fatwa authorities for collective *ijtihad* engaging multidisciplinary expertise. Constraining factors include epistemic concerns about AI hallucination and misattribution, authority challenges from algorithmic displacement of scholarly interpretation, and accountability gaps in AI-mediated decision-making.

4.2.2 Restatement of Findings

The enabling-constraining dynamic reveals that while Islamic jurisprudence possesses substantial adaptive capacity, successful AI integration requires deliberate institutional mechanisms to address epistemic, authority, and accountability challenges. The enabling factors are grounded in classical jurisprudential traditions that anticipate the need for legal evolution, while constraining factors emerge from the specific characteristics of AI technologies that differ fundamentally from previous technological innovations.

4.2.3 Critical Analysis

The methodological flexibility enabling AI integration is demonstrated through the principle of *sadd al-dhara'i* (blocking means to harm), which provides a proactive framework for evaluating potential negative consequences of AI applications before they manifest (Ruwandoruwa & Mika'ilu, 2026). This principle, when applied judiciously with thorough *ijtihad*, remains essential for addressing contemporary uncertainties while upholding *maqasid* objectives. Similarly, *maslahah mursalah* enables legal reasoning for matters not explicitly addressed in textual sources, permitting jurisprudential engagement with genuinely novel technologies.

However, epistemic challenges pose significant constraints. Research evaluating Islamic chatbot performance reveals that AI systems fail to meet standards of Islamic legal reasoning, with issues including contextual inaccuracies, inability to grasp nuanced doctrinal meanings, and risks of textual distortion (Wahid, 2025). The phenomenon of "AI hallucination"—where systems generate plausible but factually incorrect information—is particularly concerning in religious domains where accuracy of textual transmission is paramount.

Authority challenges emerge from the shifting landscape of religious guidance in digital environments. Traditional fatwa authority is rooted in scholarly qualification, *isnad*-based transmission, contextual discernment, and institutional oversight, while digitally mediated environments operate through visibility metrics, platform logics, and algorithmic amplification (Atallah, 2026). This transformation introduces ambiguities concerning authority, legitimacy, and moral agency that require governance frameworks to address.

Accountability gaps present the most complex constraining factor. When AI systems participate in legal reasoning or guidance, determining responsibility for errors or harm becomes problematic under traditional frameworks that presume human agency (JABEJE et al., 2025). Islamic principles of *amanah* (trust) and *maslahah* (public interest) provide moral foundations for accountability, but operationalizing these principles for algorithmic systems requires innovative governance mechanisms.

4.3 Transformative Implications: Toward an Ethical Framework

4.3.1 Main Findings

The transformative findings indicate that a comprehensive ethical framework for AI governance in Islamic legal reasoning requires integration of five core components: (1) preservation of human scholarly authority as the ultimate source of legal validity; (2) maqasid-based evaluation criteria for assessing AI applications; (3) institutional oversight mechanisms through specialized AI ethics committees; (4) interdisciplinary collaboration protocols between Islamic scholars and technology experts; and (5) adaptive governance processes enabling continuous evaluation and revision.

Table 1: Comparison of Indonesian Fatwa Institutions' Methodological Approaches to Digital Transformation

| Institution | Primary Methodology | Epistemological Character | AI Governance Orientation |
|--------------------------------|--------------------------|--------------------------------------|---|
| MUI (Indonesian Ulema Council) | Institutional-Regulatory | Maqasidi with regulatory focus | Centralized oversight, formal certification |
| NU (Bahtsul Masail) | Classical-Traditional | Communitarian with textual grounding | Collective deliberation, gradual adaptation |
| Muhammadiyah (Majelis Tarjih) | Rational-Integrative | Bayani-Burhani-'Irfani synthesis | Science-informed, progressive engagement |

Table 2: Proposed AI Governance Framework Components with Usul al-Fiqh Foundations

| Component | Description | Usul al-Fiqh Principle | Implementation Mechanism |
|---------------------------------|--|-------------------------------------|-------------------------------|
| Human Authority Preservation | Maintains mujtahid as ultimate legal authority | Ijtihad (independent reasoning) | Human-in-the-loop requirement |
| Maqasid-Based Evaluation | Assesses AI against five essential objectives | Maqasid al-Shariah | Ethical impact assessment |
| Institutional Oversight | Provides collective scholarly supervision | Ijtihad Jama'i (collective ijtihad) | AI Ethics Committees |
| Interdisciplinary Collaboration | Integrates technological and jurisprudential expertise | Istishab (consulting experts) | Joint working groups |
| Adaptive Governance | Enables continuous monitoring and revision | Sadd al-Dhara'i (blocking harm) | Periodic review protocols |

4.3.2 Restatement of Findings

The proposed framework positions AI as a supportive instrument within the *ijtihad* process while preserving human *mujtahid* authority as the essential element for legal validity. This framework operationalizes *maqasid* principles through concrete governance mechanisms, addresses institutional challenges through collaborative structures, and provides adaptive capacity for responding to technological evolution.

4.3.3 Implications and New Model

The proposed "AI-Assisted *Ijtihad* Framework" integrates classical *usul al-fiqh* methodologies with contemporary AI governance requirements through four operational layers:

| Layer | Function | Usul al-Fiqh Basis | AI Governance Element |
|----------------|-----------------------------------|--|--|
| Normative | Establishes ethical boundaries | Maqasid al-Shariah (five objectives) | Algorithmic fairness, dignity preservation |
| Methodological | Guides legal reasoning process | Qiyas, Istihsan, Maslahah Mursalah | Transparency, explainability |
| Institutional | Provides oversight and validation | <i>Ijtihad</i> Jama'i (collective reasoning) | Human-in-the-loop, ethics committees |
| Adaptive | Enables responsive governance | Sadd al-Dhara'i (blocking harm) | Risk assessment, continuous monitoring |

This framework ensures that AI applications in Islamic legal contexts operate within boundaries established by *maqasid* objectives, employ methodologies consistent with *usul al-fiqh* principles, receive institutional validation through collective scholarly engagement, and remain subject to adaptive governance mechanisms capable of responding to emerging challenges (Hidayati & Cynthia, 2024).

5. DISCUSSION

5.1 Summary of Main Findings

This research demonstrates that Indonesian *usul al-fiqh* possesses substantial adaptive capacity for governing AI applications in Islamic legal reasoning through the integration of classical methodological tools with contemporary ethical requirements. The analysis reveals three significant findings: first, that *maqasid al-shariah* provides a comprehensive normative framework for evaluating AI technologies against fundamental Islamic objectives; second, that Indonesian fatwa institutions exhibit complementary epistemological approaches capable of addressing diverse dimensions of AI governance; and third, that responsible AI integration requires positioning technology as a supportive instrument rather than a replacement for human scholarly authority.

5.2 Contextualization

The findings must be understood within the broader context of digital transformation reshaping religious authority globally. Indonesia's experience reflects patterns observed across Muslim-majority societies where traditional institutions navigate tensions between preserving scholarly authenticity and engaging digital platforms (Prasetianti et al., 2025). The fragmentation of religious authority in digital spaces—with institutional fatwas competing against algorithmically amplified content from non-formal

religious actors—creates urgency for governance frameworks that strengthen rather than diminish scholarly legitimacy.

The Indonesian context provides particularly valuable insights due to the pluralistic arrangement of fatwa institutions, each representing distinct methodological traditions that collectively demonstrate the breadth of Islamic jurisprudential resources available for technological engagement. MUI's regulatory-institutional model, NU's classical-communitarian approach, and Muhammadiyah's rational-integrative framework offer complementary strengths that, when coordinated, provide comprehensive governance capacity (Nurbaeti et al., 2025).

5.3 Theoretical Interpretation

The research findings support the theoretical proposition that Islamic jurisprudence functions as a "living tradition" capable of continuous adaptation to changing circumstances while maintaining fidelity to foundational principles. This adaptability derives from the distinction between immutable textual sources (Quran and Sunnah) and mutable interpretive methodologies that enable engagement with novel situations through reasoned extension of principles (Kamali, 2025). The maqasid framework operationalizes this adaptability by providing teleological orientation that transcends specific textual provisions while remaining grounded in divine objectives.

The theoretical interpretation further suggests that AI governance represents a case of "dual adaptation" where both technological systems and legal frameworks must evolve in response to each other. AI systems require governance to align with Islamic values, while Islamic legal methodology must develop capacities for addressing genuinely unprecedented technological phenomena. This dual adaptation necessitates the interdisciplinary collaboration emphasized in the proposed framework (Alamsyah et al., 2025).

5.4 Understanding the Framework Components

The five components of the proposed ethical framework reflect both convergence with international AI ethics standards and distinctive contributions from Islamic thought. The preservation of human scholarly authority addresses concerns about algorithmic displacement that are central to global AI governance discourse, while grounding this concern in the Islamic principle that legal validity derives from qualified human interpretation of divine sources (Usmonov, 2025).

Maqasid-based evaluation criteria parallel the values-based approaches in international frameworks (such as OECD AI Principles emphasizing human-centered values) while adding the distinctive dimension of accountability before God (taqwa) that provides internal motivation for ethical compliance beyond external regulatory enforcement (Waseem & Rahim, 2025). Institutional oversight through specialized committees operationalizes the Islamic principle of shura (consultation) while addressing governance requirements for transparency and accountability.

5.5 Comparison with Previous Studies

The findings align with existing research demonstrating that Islamic ethical precepts show broad compatibility with global AI ethics principles (Muchtasor, 2025). However, this study extends previous work by developing an operational framework specifically grounded in Indonesian institutional contexts rather than abstract theological principles. While earlier studies focused on whether Islamic jurisprudence can accommodate AI, this research examines how accommodation can be institutionalized through concrete governance mechanisms.

The research diverges from studies that envision more extensive AI involvement in fatwa processes, instead supporting the position that AI should serve as a supportive tool under human supervision (Usmonov, 2025). This position reflects both epistemic concerns about AI limitations in contextual reasoning and normative commitments to preserving the spiritual dimensions of Islamic legal guidance that AI systems cannot replicate.

5.6 Implications

The research generates implications across theoretical, practical, and policy dimensions. Theoretically, the study contributes to contemporary *usul al-fiqh* discourse by demonstrating how classical methodological tools can be reconceptualized for technological governance while maintaining methodological integrity. The framework advances the emerging field of "digital fiqh" by providing systematic integration of traditional and contemporary sources (Harefa, 2025).

Practically, the findings offer guidance for Indonesian fatwa institutions developing responses to AI technologies. The emphasis on institutional collaboration suggests that MUI, NU, and Muhammadiyah could benefit from coordinated approaches that leverage their complementary strengths rather than fragmented independent responses. The framework provides evaluative criteria for assessing specific AI applications against *maqasid* objectives and *usul al-fiqh* principles.

Policy implications include recommendations for establishing AI ethics committees within fatwa institutions, developing certification standards for Shariah-compliant AI applications, and creating educational programs to enhance digital literacy among Islamic scholars. The Indonesian government's efforts to integrate AI governance with national regulatory frameworks could benefit from incorporating the proposed Shariah-aligned approach that addresses the religious sensibilities of the Muslim-majority population (Bachtiar, 2025).

6. CONCLUSION

This study establishes that Indonesian *uṣūl al-fiqh* offers robust epistemic and ethical resources for governing artificial intelligence within Islamic legal reasoning. It shows that Islamic jurisprudence can function proactively by providing normative frameworks grounded in *maqāṣid al-sharī'ah*, which align with global AI ethics while contributing distinctive principles such as spiritual accountability and divine stewardship. The proposed *AI-Assisted Ijtihad Framework* demonstrates how artificial intelligence can be positioned as a supportive tool that enhances, rather than replaces, human scholarly authority, thereby preserving the integrity of Islamic legal validity.

The research advances theory by reconceptualizing classical methodologies such as *sadd al-dharā'i'*, *maṣlahah mursalah*, and *ijtihād jamā'i* as adaptive instruments for contemporary technological governance. This contributes to the development of a "digital *maqāṣidī fiqh*" capable of addressing emerging ethical challenges in digitally mediated environments. Methodologically, the study highlights the strength of integrating doctrinal and comparative-institutional approaches to capture both normative foundations and practical diversity across Indonesian fatwa institutions.

Practically, the findings underscore the need for institutional innovation, including specialized AI ethics mechanisms and enhanced collaboration between scholars, technologists, and policymakers. Sustainable AI governance in Islamic contexts depends on aligning technological advancement with ethical accountability. Future research should prioritize empirical, comparative, and longitudinal studies to refine implementation strategies and strengthen the role of Islamic legal thought in shaping responsible AI development.

7. CRediT Author Statement

Sukarni: Conceptualization, Methodology, Formal analysis, Investigation, Writing – Original Draft, Visualization, Project administration. Aulia Mutiah: Data Curation, Validation, Formal analysis, Writing – Review & Editing. Fitri Al Kadumi: Supervision, Resources, Writing – Review & Editing, Conceptualization.

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