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Harnessing Artificial Intelligence for Mosque Management and Development: Opportunities, Challenges, and Strategic Approaches

Menggunakan Kecerdasan Buatan dalam Pengurusan dan Pembangunan Masjid: Peluang, Cabaran, dan Pendekatan Strategik

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ABSTRACT

The rapid advancement of Artificial Intelligence (AI) has transformed various sectors globally, yet its application within religious institutions—particularly mosques—remains largely unexplored. While existing studies focus mainly on basic digitalization efforts such as administrative applications and IoT-based systems, there is a significant gap in understanding how AI can be strategically integrated into mosque management in alignment with Islamic values. This study aims to fill that gap by analyzing the opportunities, challenges, and strategies related to the adoption and implementation of AI in mosque management and development. Using a qualitative, descriptive-analytical approach based on an extensive literature review, the study examines scholarly journals, books, reports, and previous studies relevant to this topic. Through thematic analysis, it identifies key themes surrounding the potential and limitations of AI integration. The findings reveal that AI holds great potential to enhance efficiency, transparency, and service quality in mosques—particularly in financial management, congregational services, da'wah programs, and human resource optimization. However, challenges such as inadequate infrastructure, limited digital literacy, resistance to innovation, and ethical concerns regarding the alignment of AI with Islamic principles must be carefully addressed. The study proposes several strategic measures, including policy formulation, capacity building for mosque administrators, and collaborative partnerships with stakeholders and technology developers. This research contributes to the discourse on digital transformation in Islamic institutions by offering a conceptual framework for the ethical and effective integration of AI in mosque management. It also provides practical recommendations to support mosques in becoming adaptive, transparent, and spiritually grounded institutions in the digital era.

Keywords: Artificial Intelligence; mosque; opportunities; challenges; strategies

ABSTRAK

Kemajuan pesat Kecerdasan Buatan (Artificial Intelligence, AI) telah mengubah pelbagai sektor di seluruh dunia, namun penerapannya dalam institusi keagamaan—khususnya masjid—masih belum diterokai secara meluas. Kajian-kajian sedia ada lebih banyak menumpukan kepada usaha pendigitalan asas seperti aplikasi pentadbiran dan sistem berasaskan Internet of Things (IoT), sedangkan masih wujud jurang yang ketara dalam memahami bagaimana AI dapat diintegrasikan secara strategik dalam pengurusan masjid selaras dengan nilai-nilai Islam. Kajian ini bertujuan untuk mengisi jurang tersebut dengan menganalisis peluang, cabaran, dan strategi yang berkaitan dengan penerimaan serta pelaksanaan AI dalam pengurusan dan pembangunan masjid. Menggunakan pendekatan kualitatif dengan kaedah deskriptif-analitikal berasaskan ulasan literatur yang menyeluruh, kajian ini meneliti jurnal ilmiah, buku, laporan, dan kajian terdahulu yang relevan dengan topik ini. Melalui analisis tematik, kajian ini mengenal pasti tema utama berkaitan potensi dan keterbatasan integrasi AI. Dapatan kajian menunjukkan bahawa AI mempunyai potensi besar untuk meningkatkan kecekapan, ketelusan, dan kualiti perkhidmatan di masjid—terutamanya dalam pengurusan kewangan, khidmat jemaah, program dakwah, serta pengoptimuman sumber manusia. Walau bagaimanapun, cabaran seperti kekurangan infrastruktur, tahap literasi digital yang terhad, penentangan terhadap inovasi, serta kebimbangan etika mengenai keselarasan AI dengan prinsip Islam perlu ditangani secara berhati-hati. Kajian ini mencadangkan beberapa langkah strategik termasuk penggubalan dasar yang jelas, pembangunan keupayaan pentadbir masjid, dan kerjasama dengan pihak berkepentingan serta pembangun teknologi. Kajian ini menyumbang kepada wacana transformasi digital dalam institusi Islam dengan menawarkan kerangka konseptual bagi pengintegrasian AI yang beretika dan berkesan dalam pengurusan masjid. Ia juga memberikan cadangan praktikal bagi menyokong masjid menjadi institusi yang adaptif, telus, dan berteraskan kerohanian dalam era digital.

Kata kunci: Kecerdasan Buatan; masjid; peluang; cabaran; strategi

INTRODUCTION

In the context of Islamic civilization, the mosque is not only positioned as a place for ritual worship such as prayer and remembrance, but also as a central institution in shaping and maintaining the social order of the Muslim community (Hoelzchen, 2022). Since the time of the Prophet Muhammad pbuh, the mosque has functioned as a center for decision-making, education, the community's economy, and Islamic preaching (Alkhotob et al., 2023). These functions have made the mosque the main axis of Muslim community life, integrating the spiritual dimension with the social dimension in a harmonious manner.

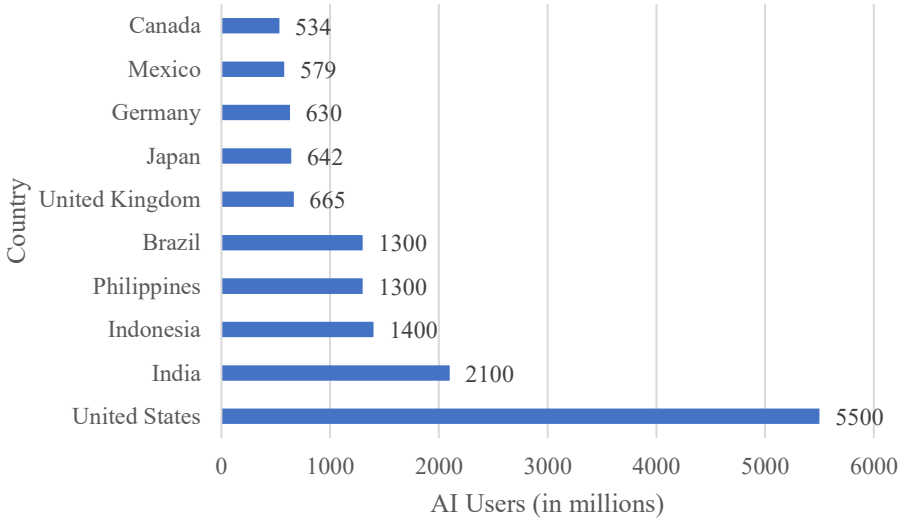
In the modern context, marked by the rapid advancement of technology, the challenges of managing and developing mosques have also evolved and become increasingly complex. Modern mosque management demands not only administrative and financial skills but also the ability to understand the diverse needs of the congregation, the capacity to manage data intelligently, and the creativity to design programs relevant to the times and the characteristics of the surrounding community (Mohammed et al., 2025). The digital transformation sweeping across almost all aspects of life has urged mosques not to be left behind in utilizing technology to maintain their significance and address the challenges of the times (Ghulam Muhammad Channa et al., 2025).

One of the most groundbreaking technologies revolutionizing various fields of human life is Artificial Intelligence (AI). AI, a branch of technology aimed at creating systems capable of mimicking human intelligence, demonstrates significant impacts across domains such as education, healthcare, transportation, industry, and public services, improving efficiency and accuracy (Fahimirad & Kotamjani, 2018). Particularly pertinent is the role of AI in mosques, which have evolved beyond mere places of worship to become holistic service centers addressing diverse community needs, including education, social development, economic empowerment, and healthcare services (Ali et al., 2022).

Writer Buddy, an AI-powered writing tool platform, released an industry analysis report on AI, covering usage statistics of AI tools and global user behavior. Between September 2022 and August 2023, over 24 billion visits were recorded across the 50 most popular AI tools, with an average monthly

growth of 236.3 million visits. Overall, the industry saw an average of 2 billion visits per month, which rose to 3.3 billion over the past six months. The United States recorded the highest traffic, contributing 5.5 billion visits or 22.62% of the total. Indonesia ranked third with 1.4 million visits, behind India and slightly ahead of the Philippines (see Figure 1). Europe accounted for a total of 3.9 billion visits, with the United Kingdom and Germany among the top 10 countries in the region. ChatGPT emerged as the most popular AI tool, generating 14 billion visits, over 60% of the total traffic. The majority of users accessed it via mobile devices (63%) and were predominantly male, making up 69.5% of total visits (GoodStats, 2024).

Figure 1: Top 10 Countries with the Most AI Users



Source: GoodStats (2024)

In this rapidly evolving societal landscape, the ability of mosques to adapt is imperative. AI offers numerous opportunities for transformative institutional reform within these social centers. It allows for the management of congregation data more effectively, enables the design of programs tailored to community needs, and fosters personalized religious experiences (Thoriquttyas & Rohmawati, 2024). Moreover, AI can automate managerial tasks such as finance, logistics, and communication areas often hampered by resource constraints in mosque environments resulting in enhanced operational efficiency (Fahmi, 2018). Applications of AI such as natural language processing can further develop digital Islamic content, including Q&A applications and customized prayer reminders, thereby enriching the community's engagement with their faith (Alkhouri, 2024).

Despite the apparent advantages, the adoption of AI technologies in mosque management remains limited. Many mosques persist with traditional management practices and encounter hurdles such as digital literacy gaps among administrators and congregants, financial obstacles to technology implementation, and ethical concerns regarding AI's potential impact on religious values (Kozak & Fel, 2024). Specifically, critical questions arise concerning AI's understanding of Islamic values and how to ensure its integration aligns with spiritual sincerity and proper conduct within mosque management (Thoriquttyas & Rohmawati, 2024). This indicates that any implementation of AI must transcend technical aspects, necessitating a holistic approach that incorporates religious understanding and community inclusivity (Kirom et al., 2024). In conclusion, while AI holds transformative potential for mosques as service-oriented institutions, its implementation must address both technological and ethical dimensions to foster genuine community engagement and promote the institution’s foundational values.

Therefore, the discussion or study of the implementation of Artificial Intelligence in mosque management and development becomes highly relevant for comprehensive examination. Not only to identify its potential and advantages, but also to understand the challenges, concerns, and strategies

needed to ensure that this technology is used wisely and proportionally in accordance with Islamic values. This study is important as an effort to bridge the demands of modern times with the noble Islamic values, ensuring that the mosque remains a center of civilization that can adapt and innovate without losing its identity. Furthermore, the urgency of this study lies in the need to formulate a *wasathiyah* (moderate) approach, which not only looks at technology in terms of efficiency but also considers ethics, spirituality, and Islamic etiquette. AI, as an algorithm-based and big data system, naturally operates in a logical and instrumental manner, whereas Islamic values call for sincerity, etiquette, and morality in every action. Without a strong epistemological and normative framework, the use of AI risks neglecting the spirituality that lies at the heart of the mosque's existence.

The phenomenon of mosque digitalization has started to gain attention from academics in recent years. These studies generally aim to address the need for modernization in mosque management through the use of information technology. One example can be found in the study by Santosa et al. (2021), which examines the design of a mobile-based mosque activity monitoring application using a Human-Centered Design (HCD) approach. This research aims to develop an application that facilitates congregants in accessing information about mosque activities and tracking schedules and attendance. The study used the HCD principles to ensure that the designed application provides an intuitive user experience and meets the needs of mosque users. The results showed that the developed application was effective in increasing congregant engagement and simplifying the management of mosque activities. This demonstrates the importance of integrating application-based technology to support modern and responsive mosque management.

Meanwhile, Gunawan et al. (2023) studied the use of technology-based applications to distribute information regarding Islamic studies at Masjid Nurul Iman. This research aimed to develop and implement an application that presents information on study schedules, study materials, and other religious activities for mosque congregants. The findings revealed that this application successfully improved accessibility to information, made it easier for congregants to participate in religious activities, and increased their participation in Islamic studies. The study also highlighted the importance of information technology in strengthening the mosque's role as a center for learning and dawah in the digital era.

Rusmiati, Angellia, & Hamzah (2025) discussed the development and implementation of an Android-based application to improve the services of the Badan Kesejahteraan Umat (BKU) at Masjid Al-Muhajirien. This study aimed to optimize the management of social services and welfare programs run by the mosque through the E-Corp application. The research findings indicate that the application is effective in facilitating the management of welfare programs, speeding up the distribution of information to congregants, and enhancing transparency and accountability in managing funds and social activities. This application also succeeded in increasing congregant participation in social programs and strengthening the mosque's role in empowering the surrounding community.

However, all of these studies mainly focus on the general use of digital technology, such as application development, information system digitalization, and integration of sensor-based hardware. While important, this approach has not yet explored Artificial Intelligence (AI) as a strategic pillar in building the mosque of the future. AI possesses unique capabilities that go far beyond static digitalization, such as predictive analytics, adaptive learning, automated decision-making based on data, and natural language processing, all of which are highly potential in the context of religious services. From the literature review, it is clear that there is a significant research gap concerning the implementation of AI in mosque management and development. Existing studies are generally limited to basic digitalization, such as management applications and IoT, without addressing the strategic and integrated potential of AI. There is a major gap in that no strategic and holistic approach to AI implementation in mosques has yet been developed. Most existing research is descriptive and focuses on the development of specific technologies. Few studies have laid out a strategic framework for implementing AI in mosques holistically, considering technical-operational, managerial, social-cultural, and Islamic value dimensions that form the foundation of mosques.

Therefore, this research is conducted to analyze the opportunities that can be leveraged from the implementation of AI in mosque management and development, in areas such as financial management, congregational services, dawah, and resource optimization. This study also aims to identify various challenges that may arise in the adoption of AI, including technical, social, cultural, and ethical barriers specific to the mosque context. Furthermore, this research will formulate a strategy for AI implementation that is not only effective from a technical and managerial standpoint but also ethical and aligned with the Islamic values that provide the spiritual foundation for mosques.

This research is expected to make an important contribution, both theoretically and practically, to the development of knowledge and institutional management in Islam in the digital era. Theoretically, this study enriches interdisciplinary literature connecting information technology, mosque management, and Islamic studies, particularly in the context of applying AI, which has rarely been systematically addressed in religious settings. More than just presenting data, this study offers a conceptual approach that can serve as the basis for developing AI implementation theories and models grounded in Islamic values. This opens up new discussions on the integration of technology and spirituality in contemporary Muslim societies. Practically, the findings of this research can provide strategic references for mosque administrators, Islamic technology developers, and policymakers. It is expected to help formulate a wise, contextual, and sharia-compliant AI utilization strategy, enabling mosques to transform into adaptive, professional institutions that remain rooted in Islamic values. Thus, mosques will not only function as places of worship but also as centers for community empowerment in the digital era.

LITERATURE REVIEW

The integration of Artificial Intelligence (AI) and digital technologies in mosque management and development is emerging as an essential facet for enhancing operational efficiency, community engagement, and financial accountability. Through various studies, we elucidate the crucial role AI and technology play in mosque management frameworks, emphasizing digitalization's potential to transform traditional management practices into more efficient systems.

Digital transformation initiatives within mosque operations, as discussed in works by Kirom et al. (2024) and Hidayat et al. (2024), highlight the advantages of utilizing technology for improved community services and administrative effectiveness. These studies underline that digitalization aids communication, financial management, and transparency within mosques, thereby fostering a more engaged community. For instance, Kirom et al. (2024) note that digital tools can empower mosque administrators (takmir) by enhancing their capability to oversee activities and promote youth mentorship programs efficiently, leveraging a modernized management framework.

Further, research by Jusoh et al. (2023) emphasizes the necessity of web-based systems in managing mosque operations, specifically the 'imarah mosque' program. This study advocates for the development of digital management systems capable of facilitating program oversight and community engagement, thereby substantiating the mosque's role as a center for community development. Similarly, studies examining mosque financial management, including those by Aggraeni et al. (2023) and Haryono & Sujarwo (2023), reveal that implementing technology-driven financial systems not only promotes transparency but also engenders trust within the congregation. By adopting mobile applications for financial transactions, mosques can achieve more accurate accounting practices and bolster their fundraising efforts.

A significant area of concern is the traditional approach to financial management in mosques, which has often been manual and inefficient. Research by Puspitasari et al. (2025) supports the notion that current practices hinder effective administration in the wake of Society 5.0, advocating for the adoption of information technology to modernize operations and ensure accountability in financial reporting. Notably, Suarni & Nurbaya (2024) identify a crucial intersection between mosque financial management and the halal economy, calling for enhanced training programs that equip mosque administrators with the necessary skills to utilize technology effectively for improved financial outcomes. Moreover, the concept of 'smart mosques' is gaining traction, illustrated in studies by Febrianty et al. (2023) and Mujaahid et al. (2023). These works advocate for the development of

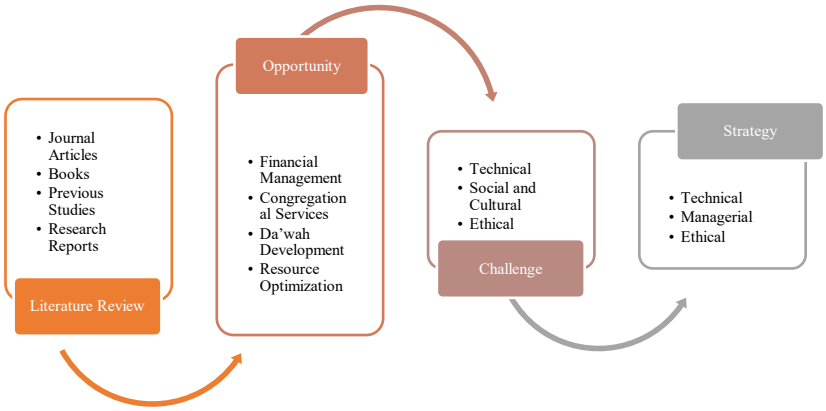
applications that facilitate efficient information management, including data related to community activities and finances, thereby enhancing operational coherency and congregation involvement. This is further supported by insights from Hidayat et al., who found significant competency improvements among mosque management participants following digital training workshops, underscoring the transformative potential of technology in empowering mosque administrators (A. Hidayat et al., 2024).

In conclusion, the synthesis of AI and digital transformation in mosque management is vital for promoting efficient operations, transparent financial practices, and community engagement. The examined literature reveals a compelling case for embracing technology in enhancing mosque functionality, from operational administration to financial management, which collectively supports the development of a robust mosque management ecosystem.

METHODOLOGY

This study employs a qualitative approach rooted in a descriptive-analytical research design to investigate the opportunities, challenges, and strategies for implementing Artificial Intelligence (AI) in mosque management and development (Creswell & Creswell, 2017). The qualitative methodology is particularly suitable for this research, as it enables an in-depth exploration of complex and context-bound phenomena related to mosque administration, community engagement, and technology adoption. The human, organizational, and ethical dimensions inherent in mosque management require interpretive understanding that cannot be adequately captured by quantitative methods alone (Mutmainah et al., 2024; Supardin et al., 2023).

Figure 2: Method of Research



Source: Author's Analysis (2025)

The primary method employed in this research is an extensive literature review (see Figure 2). Relevant sources were systematically identified through keyword searches across major academic databases, including Scopus, Google Scholar, and the Directory of Open Access Journals (DOAJ). The reviewed publications cover the period from 2015 to 2025, with a particular concentration on studies published between 2021 and 2025, reflecting the most recent developments in Artificial Intelligence (AI), digital mosque management, and technological transformation within Islamic institutions. The keywords used consisted of various combinations such as "Artificial Intelligence", "mosque management", and "digital transformation". The selection of sources was guided by several criteria, namely: the literature must discuss applications of Artificial Intelligence within organizational or religious contexts; it should provide empirical or conceptual insights relevant to management, ethics, or Islamic values; and it must be published in reputable academic journals, edited books, or credible institutional research reports.

From an initial screening of approximately 60 sources, 30-40 works were selected for in-depth analysis, comprising peer-reviewed journal articles, conference papers, academic books, and institutional reports. Each selected source was then critically reviewed to determine its relevance to the objectives and thematic scope of this study. The data obtained from the literature were subsequently analyzed using thematic analysis, following the framework proposed by Braun & Clarke (2006). This analytical process involved several stages: first, familiarizing with the data through repeated readings to grasp the general context and content of AI implementation in mosque management; second, generating initial codes by identifying key statements or findings related to opportunities, challenges, and strategies in AI integration; third, grouping similar codes into broader thematic categories such as technological potential, ethical considerations, organizational barriers, and strategic frameworks. In the subsequent stages, the identified themes were reviewed and refined to ensure internal consistency and supported by empirical evidence from the sources. Each theme was then clearly defined and labeled according to its conceptual boundaries and relevance to mosque management within the framework of Islamic values. Finally, all themes were synthesized into a coherent analytical narrative aligned with the research objectives. The results of the thematic analysis were organized into three main analytical clusters—opportunities, challenges, and strategies—which form the structural foundation of the study's discussion. Through this systematic process, the study integrates conceptual and empirical insights from the reviewed literature to formulate a strategic framework for the ethical, efficient, and Shariah-compliant implementation of Artificial Intelligence in mosque management and development.

RESULTS AND DISCUSSION

I. Opportunities for Implementing AI in Mosque Management and Development

A. Opportunities in Financial Management

The management of mosque finances is one of the crucial aspects in ensuring smooth mosque operations and the effectiveness of services for congregants. Along with technological advancements, the implementation of Artificial Intelligence (AI) in mosque financial management opens up various opportunities that can enhance efficiency, transparency, and accuracy in financial management.

1. Utilization of AI in Automating and Ensuring Accuracy in Mosque Financial Management

One of the main opportunities offered by AI technology is the automation of mosque financial transactions (Setiawan, 2024). By using AI-based software, mosque administrators can automate various administrative tasks, such as donation recording, routine payments (e.g., for mosque maintenance or operational costs), and budget management. AI enables faster and more accurate data processing than manual methods, reducing the likelihood of human error and ensuring that every transaction is recorded correctly. Furthermore, AI can also help monitor cash flow and identify unusual transaction patterns, which could indicate potential problems or misconduct. AI-based systems can provide early warnings if suspicious transactions occur, helping mosque administrators address issues more quickly and prevent potential losses.

2. Data Analysis for Efficient Management of Zakat, Infaq, and Sadaqah Funds

Managing zakat, infaq, and sadaqah funds is an essential part of mosque financing that requires a meticulous and structured approach (Usman, 2024). By utilizing AI, mosque administrators can perform deeper data analysis to understand donation patterns and congregant needs. AI can process historical data regarding donation amounts, donation timing, and fund usage purposes, which helps administrators plan fund allocation more efficiently. For instance, AI can help identify seasonal trends in donations, such as increased zakat or infaq during Ramadan, and provide insights into the best times to launch donation campaigns. This technology also enables mosque administrators to optimize fund allocation for various social programs or dakwah activities based on available data about congregant needs. Additionally, AI can facilitate the creation of more timely and accurate reports, ensuring that fund distribution is transparent and in line with the applicable regulations. In this way, mosques can

improve the efficiency of managing funds from congregants, which in turn enhances the sustainability and welfare of the community.

3. Improved Transparency and Accountability in Financial Reporting

One of the common challenges in mosque financial management is the lack of transparency and accountability in financial reporting (Suarni & Nurbaya, 2024). By implementing AI, mosques can provide more accurate financial reports that are easily accessible to congregants. AI systems can automate the generation of monthly or annual reports, covering mosque income and expenditures, as well as the use of zakat, infaq, and sadaqah funds. This technology can also provide real-time reports, enabling mosque administrators to monitor finances more effectively and make faster, more informed decisions. Transparency in financial reporting is essential for maintaining congregant trust and ensuring that the collected funds are used correctly and in line with the stated goals. Furthermore, AI can provide in-depth analysis of financial reports, such as analyzing income-to-expense ratios or evaluating cost efficiency. This not only improves accountability but also gives mosques the opportunity to improve their financial management in the long term. Therefore, the use of AI in mosque financial management not only enhances efficiency but also builds credibility and trust among congregants.

B. Opportunities in Congregant Services

Congregant services are a critical aspect of mosque management. Therefore, Artificial Intelligence (AI) can play a significant role in improving the quality and effectiveness of services for congregants, whether in terms of personalizing experiences, communication, or event management. Below are some opportunities for implementing AI in congregant services:

1. Personalizing Congregant Experiences Using AI for Analyzing Preferences and Needs

AI can significantly improve how mosques personalize congregant experiences by analyzing data that reflects individual preferences, needs, and engagement history. This involves utilizing attendance records and participation trends to generate actionable insights. By recognizing patterns, AI can facilitate recommendations tailored to each congregant, such as sending reminders for events aligned with their interests. Such personalization enhances satisfaction and fosters a greater sense of community within the mosque, leading to increased engagement in religious activities (Simmerlein, 2024). AI-driven analytics also afford mosque administrators a deeper understanding of congregants' habits, which is crucial for encouraging active participation (Paesano, 2021).

2. Enhancing Communication and Interaction with Congregants Through Apps or Digital Platforms

The connection between mosques and congregants can be significantly strengthened by AI technology embedded in communication platforms. AI-enabled applications can manage requests from congregants, ensuring timely responses to inquiries, which streamlines administrative tasks while improving congregate engagement and interaction (Rožman et al., 2022). For instance, adopting AI chatbots can provide immediate assistance for questions about schedules and events, thus maintaining a fluid line of communication (Glazier et al., 2024). Furthermore, personalized messaging can keep congregants informed and involved, enhancing their overall experience and connection with the mosque community (Simmerlein, 2024).

3. Optimizing Event Schedule and Congregant Attendance Management

Effective event management is crucial for maintaining an engaged congregational life. AI can be instrumental in scheduling events by analyzing congregational attendance patterns to select optimal times and formats that encourage participation (Loftus et al., 2024). Utilizing predictive analytics can help identify times when congregants are most likely available, avoiding conflicts with other community engagements (Siradhana & Arora, 2023). Moreover, AI technologies can facilitate streamlined attendance tracking through automated systems, such as QR codes, ensuring accurate data collection to

inform future event planning and resource allocation (Loftus et al., 2024). These strategies not only improve operational efficiency but also ensure that events resonate better with congregants' preferences.

C. Opportunities in the Development of *Da'wah*

The development of *da'wah* is a crucial aspect of the mosque's role as a center for religious activities. In the rapidly advancing digital era, the utilization of technology, particularly AI, can create new opportunities for planning, personalizing, and disseminating *da'wah* messages. Here are some opportunities for implementing AI in the development of *da'wah* in mosques:

1. Data-Driven *Da'wah* Planning Using AI to Analyze Congregational Needs Trends

Using AI to analyze congregational needs represents a transformative approach to *da'wah* planning. By processing data from various sources, such as mosque activities, social media interactions, and congregation feedback, AI can identify prevailing trends and specific needs within a community. This capability enables mosque administrators to create targeted and relevant *da'wah* materials. For instance, Aziz et al. discuss how digital media can facilitate the dissemination of *da'wah*, helping mosques align their programs with community interests, such as family education or contemporary fiqh issues (Aziz et al., 2022). Furthermore, Mukhtidinov identifies that effective *da'wah* requires an understanding of societal dynamics, which can be achieved through a systematic analysis of data trends (Mukhtidinov, 2023).

2. Personalizing *Da'wah* Content According to Congregational Characteristics Using AI Technology

AI technology allows for the customization of *da'wah* content based on demographic data, preferences, and individual feedback from congregants. This personalization ensures that the messages resonate with different segments of the community, as congregants have varying backgrounds and levels of religious understanding. For instance, Aslan and Pong illustrate how Muslim homemakers utilize digital platforms for tailored *da'wah* content that reflects their specific experiences and needs (Aslan & Pong, 2023). Moreover, the incorporation of interactive formats for younger audiences, such as videos and podcasts, compared to more traditional modalities for older congregants enhances engagement and fosters a deeper understanding of Islamic teachings (Khasanah et al., 2024).

3. Enhancing the Effectiveness of *Da'wah* Message Distribution Through Integrated Digital Platforms with AI

With the advent of digital platforms, the distribution of *da'wah* has expanded beyond traditional confines, making it essential for mosques to adopt AI to optimize their outreach efforts. AI can help identify the most effective channels and timing for disseminating messages, thereby increasing their impact. By analyzing interaction patterns on social media, AI can determine optimal content delivery methods whether through articles, short videos, or podcasts, all tailored to the congregation's preferences (Y. F. Hidayat & Nuri, 2024). This shift is supported by findings from Thahir, who emphasizes the importance of adapting *da'wah* strategies in modern communication, asserting that social media platforms serve as effective tools for reaching broader audiences (Thahir, 2023). By adopting AI technologies, mosques can effectively elevate their *da'wah* initiatives, ensuring that they are not only relevant and engaging but also capable of reaching wider audiences, particularly the younger generations who increasingly utilize digital tools for religious engagement (Kholili, 2023).

D. Opportunities in Resource Optimization in Mosques

The management of resources in a mosque, encompassing human resources, facilities, and spatial allocation, presents several challenges that can be addressed through the integration of artificial intelligence (AI) technology. This utilization of AI can lead to improved operational efficiencies, as well as enhanced service quality for the congregation. Herein, we delineate the opportunities AI presents for resource optimization within mosques.

1. Utilizing AI for Human Resource Management in Mosques

Effective management of human resources is vital for the seamless functioning of mosque activities. AI technologies can streamline the scheduling process for mosque staff and volunteers, facilitating optimal task allocation based on priority needs. For instance, AI systems proficient in analyzing personnel performance data can recommend individualized training programs that align with specific development needs, such as public speaking prowess or current socio-religious issues faced by imams (Insana & Satriah, 2024; Sukmawati, 2024). The ability of AI to suggest tailored learning pathways not only enhances the skill set of personnel but also ensures that mosque operations are conducted with minimal inefficiencies, thereby fostering a more organized religious environment.

2. Efficiency in Mosque Facility Usage with AI Technology

AI solutions can facilitate the efficient management of facilities such as lighting, air conditioning, and security within mosques. For example, lighting systems can be programmed to adjust automatically based on attendance or activity schedules, thus conserving energy and reducing operational costs (Hayadi et al., 2023). Similarly, AI can regulate air conditioning in response to fluctuating numbers of congregants or environmental conditions, further minimizing energy expenditure. In the context of security, AI-enhanced CCTV systems employing facial recognition can assist in identifying unusual activities, thereby enhancing the overall safety of mosque premises (EM et al., 2024). This effective utilization of technology not only improves congregation comfort but also optimizes resource consumption, establishing a more sustainable operational model for mosque management.

3. Data Analysis for Planning Optimal Space and Time Usage in Mosques

Given the constraints of physical space and time within mosques, especially when hosting large congregational activities, AI-driven data analytics can facilitate the identification of peak usage times and optimal space allocations for various activities. By examining past attendance data, AI can inform mosque administrators on the best scheduling strategies for events, from educational programs to prayer services, to ensure resource availability aligns with congregational demand (EM et al., 2024; Hayadi et al., 2023). This predictive capacity allows for enhanced flexibility in space utilization and scheduling, contributing to a vastly improved congregational experience while minimizing wasted resources. Effective space management through AI applications can ultimately transform mosques into more responsive institutions that adequately meet worshippers' evolving needs.

Table 1: Opportunities for Implementing AI in Mosque Management and Development

Aspect	Opportunities	Description
Financial Management	Automation and Accuracy in Mosque Financial Management	Faster and more accurate data processing, reducing human errors, and identifying suspicious transactions with early warnings.
	Data Analysis for Zakat, Infaq, and Sadaqah Fund Management	Analysis of donation trends, optimization of fund allocation for social and dakwah programs, and more accurate and timely reporting.

Aspect	Opportunities	Description
	Enhanced Transparency and Accountability in Financial Reports	Financial reports become more transparent and accessible to the congregation, with cost-efficiency analysis and real-time monitoring of mosque finances.
Congregational Services	Personalized Congregational Experience Using AI	Analyzing congregation preferences and needs to suggest relevant activities, enhancing satisfaction and engagement.
	Improved Communication and Interaction with Congregation	Use of AI-powered applications or digital platforms to facilitate information access and automate communication, such as prayer reminders or event notifications.
	Optimization of Activity Scheduling and Congregation Attendance Management	Analyzing congregation attendance patterns to optimize activity schedules, as well as monitoring attendance using facial recognition technology or QR codes.
Dakwah Development	Data-Driven Dakwah Planning	Analyzing dakwah needs trends through mosque data, social media, and congregation interaction to plan more structured dakwah activities.
	Personalized Dakwah Content Based on Congregation Characteristics	Tailoring dakwah content based on congregation demographics and preferences to increase engagement, such as presenting interactive content for younger generations.
	Enhancing Dakwah Message Effectiveness	Using digital platforms and AI algorithms to target the right audience and increase dakwah message effectiveness, such as through social media or AI-based apps.
Resource Optimization	Human Resource Management (HR)	Managing staff and volunteer schedules and task allocation, as well as assisting in training and development with AI.

Source: Data Processed (2025)

II. Challenges in Adopting AI in Mosques

Despite the opportunities presented by AI integration in mosque operations, several challenges must be considered to facilitate effective deployment.

A. Technical Barriers

The implementation of artificial intelligence (AI) technology in mosques, although it has many opportunities, is not free from various technical challenges that need to be faced. These challenges are often related to infrastructure limitations, human resource capacity, and system compatibility issues. Following are some of the technical obstacles faced in adopting AI in mosques:

1. Limitations in Technology Infrastructure at Mosques

The implementation of AI is significantly hindered by inadequate technology infrastructure in many mosques, particularly those located in rural or underfunded areas. Essential components such as stable and high-speed internet access, up-to-date hardware (including servers, computers, or smart devices), and reliable network systems are often either insufficient or entirely absent, creating a substantial barrier to the integration of AI-based solutions. These limitations not only obstruct daily operational improvements but also restrict the potential for broader digital initiatives such as data-driven decision-making, digital religious education, and AI-assisted community services (Hakim et al., 2024).

The financial burden associated with upgrading these infrastructures, including the cost of equipment procurement, installation, maintenance, and skilled personnel, further complicates the adoption process. This situation underscores the urgent need for a strategic and sustainable approach to enhance technology readiness in mosques. Collaborative efforts involving government support, community fundraising, partnerships with technology providers, and inclusion in national digital development agendas could serve as viable pathways to bridge the infrastructure gap and enable mosques to actively participate in the wave of digital transformation (Fitryansyah & Fauziah, 2024).

2. Limited Human Resource Capacity to Operate AI Technology

Another significant barrier to effective AI integration lies in the limited technical understanding and digital literacy possessed by mosque managers, staff, and volunteers regarding these advanced systems. Many lack the foundational knowledge required to operate, maintain, or even conceptualize the functions and benefits of AI, which leads to hesitation, misapplication, or complete neglect of available technological tools. Without targeted training, mentorship, and ongoing technical support, the capacity to leverage AI for tasks such as resource management, community engagement, data analytics, and service automation remains significantly underutilized (Joseph & Olalekan, 2024). This knowledge gap also heightens the risk of resistance due to fear of the unknown or perceived complexity. Therefore, continuous education and structured upskilling programs in digital and AI literacy are imperative for mosque personnel, not only to build competence but also to cultivate confidence in navigating technological transitions. Encouraging collaboration with tech-savvy volunteers, partnering with educational institutions, or accessing government and NGO-sponsored digital literacy initiatives can provide valuable pathways to ensure that mosque staff are not left behind in the broader movement toward digital transformation.

3. System Compatibility Issues Between New Technology and Existing Systems

Many mosques currently operate on outdated administrative and technological systems that lack the capacity to interface with or support modern AI technologies. These legacy systems often rely on manual processes, fragmented data management, and limited automation, making them inherently incompatible with the requirements of AI-driven solutions. This compatibility issue poses a significant technical and operational hurdle, as it necessitates comprehensive system overhauls or complete replacements to enable successful integration. Such transitions often involve substantial financial investment, procurement of new infrastructure, and the reconfiguration of existing workflows, all of which require careful planning and execution. Moreover, the process can be time-consuming and may temporarily disrupt essential mosque operations such as financial administration, event coordination, or educational services during the migration phase (Hakim et al., 2024). If not managed effectively, these disruptions could erode community trust and create internal resistance. Therefore, any move toward AI implementation must be accompanied by a phased, well-supported transition strategy that includes risk mitigation plans, stakeholder engagement, and contingency measures to ensure minimal disruption to mosque activities while optimizing long-term digital readiness.

B. Social and Cultural Barriers

Although the implementation of Artificial Intelligence (AI) offers various opportunities for modernizing mosque management, there are several social and cultural barriers that need to be addressed to ensure the technology is well-accepted and effectively integrated into the mosque environment. These barriers generally stem from differing perspectives, resistance to change, and disparities in technological acceptance within the community. The following are some of the social and cultural challenges that may arise in the adoption of AI in mosques:

1. Differences in Perspectives on Digitalization Among Stakeholders

Resistance to AI technology can stem from differing viewpoints among mosque administrators and patrons regarding the relevance and appropriateness of digitalization in religious settings. While some may view technological integration as a necessary step toward modernization and improved service delivery, others may perceive it as a potential threat to the sanctity, simplicity, and traditional values upheld in religious institutions. Concerns often revolve around the fear that AI may dilute spiritual experiences, reduce human interaction in worship practices, or inadvertently conflict with established religious norms and customs. This unease is further exacerbated by limited awareness or understanding of how AI can be aligned with religious values to support not replace spiritual objectives. Therefore, it is crucial that comprehensive education and dialogue regarding the ethical use, benefits, and long-term potential of AI be communicated clearly and consistently to both patrons and administrators. Such efforts can help bridge the knowledge gap, address misconceptions, and foster a more informed and constructive approach to technological adoption in religious environments (Insana & Satriah, 2024; Joseph & Olalekan, 2024).

2. Resistance to Change from More Conservative Groups within Religious Institutions

In every religious institution, including mosques, there are often conservative groups that are more cautious about adopting changes, especially those involving new technology. These groups may view change as a threat to the stability and preservation of long-held traditions. For them, the use of technology like AI may be seen as too modern and in conflict with the classical values that have been deeply ingrained in mosque management. Resistance to change can affect the smooth implementation of AI, as changes in mosque management or operations using new technology require full support from all parties, including the more conservative groups (Joseph & Olalekan, 2024). Therefore, strategies that involve open dialogue, providing in-depth explanations, and demonstrating the tangible benefits of this technology are essential in overcoming this resistance.

3. Disparities in Technology Acceptance Among Mosques with Different Socio-Economic Backgrounds

Acceptance of technology like AI can vary between mosques located in urban and rural areas or between mosques with different socio-economic backgrounds. Mosques in areas with limited access to technology infrastructure, such as slow internet connections or inadequate hardware, may face challenges in adopting AI. Additionally, mosques that rely on limited funding may also lack the budget to invest in advanced technology. This creates disparities in AI adoption between mosques in large cities and those in remote areas or with limited resources (Joseph & Olalekan, 2024). Therefore, it is important to design an implementation strategy that can be adapted to local conditions, providing affordable technology solutions, and offering training support to mosque administrators to enable them to maximize AI use according to the resources available.

C. Ethical Barriers

Although implementing artificial intelligence (AI) technology offers various benefits in mosque management, there are several ethical challenges that need to be considered to ensure that the technology is applied appropriately and in accordance with Islamic values. Below are some ethical barriers that need to be addressed in adopting AI in mosques:

1. Concerns Over the Privacy of Congregant Data Managed by AI Systems

One of the main issues that arise with the use of AI technology in mosques is concerns over the privacy of congregant data. AI systems implemented to collect and analyze data on congregants (such as attendance data, donations, or preaching preferences) require the management of very sensitive personal data. If this data is not managed carefully, it could lead to the misuse or leakage of information that harms the congregants. In Islam, the protection of an individual's privacy and dignity is highly valued. Therefore, the management of congregant data collected by AI systems must be done with great

care, ensuring that the data is only used for legitimate purposes and not misused. Furthermore, it is important to ensure that the collected data is securely stored and only accessible to authorized individuals in accordance with applicable regulations (Hakim et al., 2024).

2. Potential Misuse of Data or AI Analysis Results in a Religious Context

The use of AI in data analysis can provide valuable insights to improve mosque management, but it also presents the potential for misuse. One potential risk is the misuse of data or AI analysis results for purposes that are inconsistent with Islamic principles or for personal gain. For example, the use of congregant personal data to manipulate their preferences or decisions in religious activities or donations without clear consent.

In a religious context, this is highly sensitive as it can damage the trust of the congregation in the mosque as an institution that should uphold moral and spiritual integrity. Therefore, strict controls must be in place regarding how data is collected, stored, and used, and who is responsible for its management. The system implemented should be transparent and aligned with Islamic principles that protect individual rights.

3. Maintaining a Balance Between Technology Use and Islamic Principles Upholding Humanity and Morality

One of the greatest ethical challenges in implementing AI in mosques is how to maintain a balance between technological advancement and Islamic principles that emphasize humanity, morality, and ethics. Islam teaches that all forms of technology and innovation must be used for positive and beneficial purposes for humanity, without compromising the dignity or rights of individuals. Therefore, the use of AI in mosques must always ensure that the technology does not conflict with Islamic teachings that emphasize justice, humanity, and respect for the dignity of every individual. For example, if AI is used to manage congregant data, there should be serious attention to the potential for discrimination or marginalization of certain groups. Additionally, when designing and implementing technology, there must be principles of transparency and accountability to ensure that the technology is not misused for personal or partisan gain. The Islamic principles of morality and justice must be upheld and applied at every step of AI use to ensure that the technology does not diminish the fundamental ethical values of Islam.

Table 2: Challenges in the Implementation of Artificial Intelligence (AI) in Mosques

Aspect	Challenge	Description
Technical Barriers	Limited Technology Infrastructure in Mosques	Mosques face difficulties in providing adequate basic infrastructure such as internet, hardware, and network systems, especially in resource-limited areas.
	Limited Human Resource Capacity to Operate AI	Mosque administrators often lack the skills to operate and maintain AI systems, hindering the implementation of this technology. Training and capacity building are required.
	System Compatibility Issues	Existing legacy systems in mosques are often incompatible with AI technology, requiring significant time and cost for integration.
Social and Cultural Barriers	Differing Views on Digitalization and Technology	Some mosque administrators and congregants may feel that technology could reduce spiritual essence and diminish social interaction within the mosque. Education and socialization are necessary to overcome these differing views.
	Resistance to Change	Conservative groups in mosques may oppose the implementation of AI, seeing it as a threat to tradition and long-established values. A dialog-based

		approach and demonstration of the technology's benefits are necessary.
	Disparity in Technology Acceptance	Acceptance of technology varies between urban and rural mosques, with mosques in poor or remote areas facing greater difficulties in adopting AI.
Ethical Barriers	Concerns Over Congregant Data Privacy	The use of AI may raise concerns about the privacy of personal data, such as attendance or donations. Data management must be cautious and secure to prevent misuse.
	Potential Misuse of Data or AI Analysis Results	There is potential for the misuse of data or AI analysis results for personal gain or purposes inconsistent with Islamic principles. Strict oversight and control are needed to ensure ethical usage.
	Balancing with Islamic Principles	AI usage must ensure that it does not contradict Islamic principles that emphasize humanity and morality. A balance between technology and Islamic values must be maintained.

Source: Data Processed (2025)

III. Effective and Ethical AI Implementation Strategies in Mosques

A. Technical AI Implementation Strategies

The implementation of artificial intelligence (AI) technology in mosques requires a well-planned approach, especially in technical aspects. In order for AI to be used optimally, several strategic steps need to be taken to ensure that this technology can be seamlessly integrated into mosque operations. Here are some technical strategies that can be applied in AI implementation in mosques:

1. Developing a Technology Infrastructure Plan that Meets the Mosque's Needs

The first step in AI implementation is to develop a technology infrastructure plan that aligns with the mosque's needs. This infrastructure includes a stable internet network, hardware (such as computers, servers, and other necessary devices), as well as a secure and well-managed data storage system. Before moving forward with AI technology implementation, the mosque must ensure that its technological infrastructure supports smooth operations. This plan should also consider scalability, where the built infrastructure can grow according to the mosque's future needs. This is important to ensure that the mosque can adopt new technologies or upgrade existing systems without disrupting ongoing operations.

2. Developing AI-Based Applications and Systems that Are Easy to Access and Use by Mosque Administrators and Congregants

After the basic infrastructure is prepared, the next step is to develop AI-based applications and systems that are easy for both mosque administrators and congregants to access and use. These applications should be designed with a user-friendly interface, both for administrators who will use them for internal mosque management and for congregants who will interact with the mosque through the application. For example, AI-based applications can be used for financial data management, dakwah activity management, or scheduling prayers and mosque announcements. Additionally, AI can be used to provide dakwah material recommendations based on congregants' preferences, simplify donation processes, or disseminate current information via automatic notifications. To be effective, these systems must be easy to understand and accessible, considering the varying levels of digital literacy among congregants.

3. Training Mosque Administrators and Congregants in the Use of AI Technology

One crucial aspect of AI technology implementation is ensuring that both mosque administrators and congregants have the necessary skills and knowledge to use this technology. Therefore, structured and continuous training for both administrators and congregants is essential. This training could cover a variety of topics, such as how to use AI-based applications and systems for mosque management, how to manage data securely, and understanding how AI can be used to enhance services and dakwah effectiveness. For mosque administrators, the training should also include an understanding of ethical technology use and how to maintain a balance between AI usage and Islamic principles that prioritize humanity and justice. Furthermore, for congregants, training can be conducted through workshops or seminars aimed at introducing them to the technology used in the mosque and how they can benefit from AI-based applications in their religious lives. Good training will not only make technology usage easier but also build trust among congregants in the systems implemented, reduce fear or misunderstanding of technology, and encourage their active participation in various mosque activities.

B. Managerial AI Implementation Strategies

The implementation of artificial intelligence (AI) in mosque management not only requires technical readiness but also a well-thought-out managerial approach. For AI to be effectively applied and aligned with Islamic values, mosque management needs to formulate clear policies and build a managerial system that supports digital transformation. Some managerial AI implementation strategies include:

1. Formulating Clear Policies on AI Usage in Mosque Management

As a first step, it is important to formulate clear and transparent policies regarding AI usage in mosque management. These policies should cover ethical, legal, and technical aspects related to AI implementation, including data management, the protection of congregants' privacy, and limitations on technology usage. These policies need to take into account Islamic principles that emphasize fairness, transparency, and accountability in all aspects of life, including technology management. Furthermore, the policies should be accepted by both mosque administrators and congregants, so they feel comfortable and secure with the presence of this technology. These policies should also be flexible to adapt to rapid technological advancements, without overlooking the mosque's social and cultural needs and challenges.

2. Developing a Data-Based Performance Evaluation System to Improve Managerial Efficiency

One of the main benefits of AI implementation in mosques is its ability to collect and analyze data in real-time. Therefore, developing a data-based performance evaluation system is critical for improving mosque management efficiency. This system can help mosque administrators monitor various aspects of mosque operations, such as financial management, congregant attendance, and dakwah program effectiveness. Using AI, data related to mosque programs can be analyzed to generate deeper insights into operational performance. For example, AI can help identify trends in congregant participation in mosque activities, donation management, or even congregant satisfaction with mosque services. This data-driven performance evaluation allows mosque administrators to make more accurate, measurable, and evidence-based decisions, improving efficiency and managerial effectiveness in the long term.

3. Collaboration Between Mosque Administrators, Technology Developers, and Religious Institutions for a More Holistic Implementation

The implementation of AI in mosques cannot be done in isolation. Therefore, close collaboration between mosque administrators, technology developers, and religious institutions is required. This collaboration ensures that the technology applied truly meets the mosque's needs, supports Islamic principles, and is accepted by all parties involved. Mosque administrators should work with technology developers to ensure that the AI applications or systems developed are easy to access, meet

the mosque's needs, and are understandable to both administrators and congregants. On the other hand, religious institutions, both locally and nationally, can play a role in providing guidance and advice regarding the application of AI in mosques and ensuring that its implementation aligns with religious teachings. A strong collaboration between these three parties will create a more holistic AI implementation that is sensitive to religious and social values and ensures that the mosque remains a place that provides spiritual and social benefits to Muslims in this digital age.

C. Ethical Strategies in AI Implementation

The implementation of artificial intelligence (AI) in mosques offers great potential for improving management, services, and community engagement. However, its application must be guided by clear ethical strategies rooted in Islamic teachings. These strategies revolve around three key principles: protecting personal data, aligning with Islamic values, and ensuring AI supports the objectives of *Maqāṣid al-Sharī'ah*.

1. Ensuring Protection of Congregants' Personal Data and Privacy through Clear and Strict Policies

One of the biggest challenges in implementing AI technology in mosques is protecting the personal data of congregants. Data collected by AI-based systems, such as attendance, donations, or personal preferences, must be handled with great care to prevent misuse or leakage of sensitive information. Therefore, it is important for mosque administrators to establish clear and strict data protection policies. These policies should cover the collection, storage, and use of congregants' personal data. In this regard, mosques can follow principles outlined in Islamic law, which emphasizes the importance of safeguarding individual privacy (*hifz al-'ird*) and not misusing personal information. These policies should also regulate how data is used only for legitimate purposes, such as facilitating mosque management or enhancing services to congregants, and not for commercial purposes or actions contrary to Islamic values. Additionally, mosque administrators must ensure that all technologies used have strong security systems to protect data from potential digital threats.

2. Maintaining Alignment Between Technology and Islamic Values, Including Considerations of *Maqāṣid al-Sharī'ah*

When implementing AI, it is important to ensure that the technology used does not conflict with Islamic principles. This includes prioritizing human values, justice, and morality in all aspects of technology use. One way to achieve this is by referring to the *Maqāṣid al-Sharī'ah*, the main objectives of Islamic law aimed at protecting religion, life, intellect, wealth, and lineage. AI implementation in mosques should consider *Maqāṣid al-Sharī'ah* by ensuring that the technology supports these goals. For example, the use of AI to manage zakat and infaq should be done in a way that ensures fair and transparent distribution, avoiding social inequalities. Similarly, the use of AI in dakwah should ensure that messages align with Islamic principles promoting goodness, justice, and community. Furthermore, it is crucial to avoid using technology that could undermine moral or religious values, such as technology that facilitates misuse or contradicts sharia guidance. Therefore, AI implementation policies and strategies should be based on a deep understanding of Islamic objectives, so that technology is used to improve the quality of Muslim life without violating religious boundaries.

3. Establishing Ethical Guidelines for AI Use in Mosques that Respect Humanitarian, Justice, and Transparency Values

For AI implementation in mosques to proceed properly and ethically, clear ethical guidelines are necessary. These guidelines should outline the rules for how AI is used in the context of mosques and dakwah, and how the technology can be used to provide greater benefits for the community without causing negative impacts. These ethical guidelines should focus on respecting human values and justice. For example, AI use in congregant services should ensure there is no discrimination against individuals, and that all congregants receive equal, fair, and high-quality services. Additionally, the use of AI to manage donations and zakat should be done with full transparency, so that every decision and flow of funds can be monitored and clearly accounted for. These guidelines should also consider how AI can be

used to enhance community welfare without sacrificing religious values, such as maintaining integrity, simplicity, and respect for the dignity of humanity. Thus, AI not only becomes an efficient tool but also an instrument that supports spiritual, moral, and social development in line with Islamic teachings.

AI implementation should be consistent with the principles of *Maqāṣid al-Sharī'ah*, the higher objectives of Islamic law, which aim to preserve religion (*dīn*), life (*nafs*), intellect (*'aql*), wealth (*māl*), and lineage (*nasl*). For example, AI used to manage donations or zakat must promote transparency and fairness in distribution, while AI in dakwah must amplify messages of justice, compassion, and community development. To operationalize these values, mosques should establish ethical guidelines for AI use that reinforce justice, transparency, and humanity. These guidelines should clearly define acceptable uses of AI, ensure equal service to all congregants, and prevent discrimination. In this way, AI becomes not only a technological innovation but also a tool that strengthens the spiritual and social fabric of the Muslim community in harmony with Islamic ethical standards.

Table 3: Strategies for the Effective and Ethical Implementation of Artificial Intelligence (AI) Technology in Mosques

Aspect	Strategy	Description
Technical	Development of Technological Infrastructure	Establish appropriate technological infrastructure such as internet networks, hardware, and data storage tailored to the needs of the mosque.
	Development of AI Applications	Create user-friendly AI-based applications for mosque administrators and congregants, such as financial management, scheduling, and dissemination of religious content.
	Training for Administrators & Congregants	Provide ongoing training on the use of AI, digital literacy, and technology ethics for both mosque administrators and congregants.
Managerial	Formulation of AI Policies	Develop ethical and legal policies regarding the use of AI, data protection, and Islamic principles.
	Data-Driven Performance Evaluation	Develop a mosque management evaluation system based on data analysis from AI systems.
	Multi-Stakeholder Collaboration	Build collaborations among mosque administrators, technology developers, and religious institutions for a holistic implementation of AI.
Ethical	Congregant Data Protection	Establish strict and secure privacy policies for the protection of congregants' personal data.
	Alignment with Islamic Values	Ensure that AI aligns with *Maqāṣid al-Sharī'ah* and does not contradict Islamic values.

Source: Data Processed (2025)

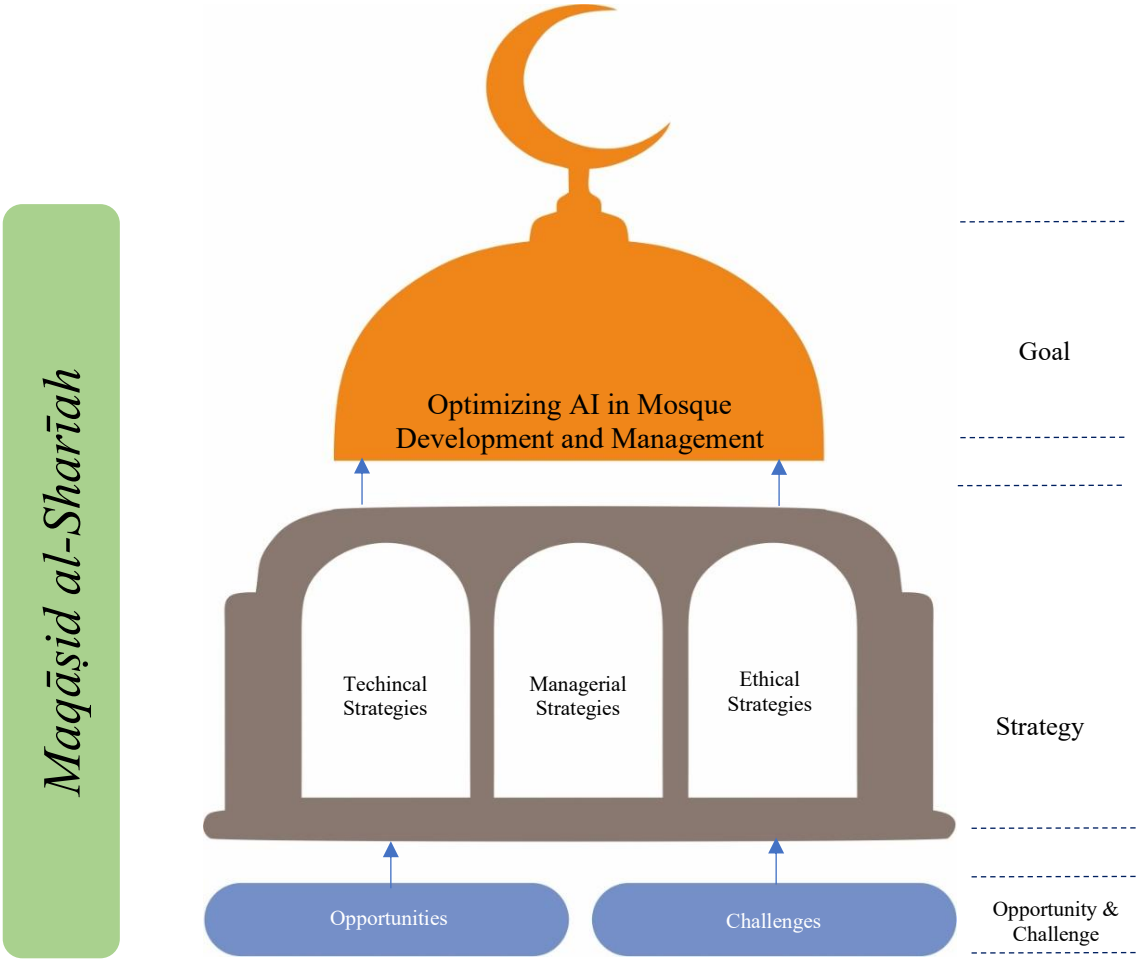
Figure 3 below presents a conceptual model designed to optimize the use of Artificial Intelligence (AI) in the management and development of mosques. The model is structured into three key components: opportunities and challenges, strategic pillars, and an overarching goal. At the base of the model are two foundational elements: Opportunities and Challenges. These represent the dual forces that shape the implementation of AI in mosque contexts. Opportunities include financial management, congregational services, dakwah development, and resource optimization, while challenges may consist of technical barriers, social and cultural barriers, and ethical barriers.

Building on this foundation, the model identifies three core strategic pillars essential to successful AI integration:

1. Technical Strategy – focusing on infrastructure development, AI application design, and digital literacy.
2. Managerial Strategy – emphasizing policy formulation, performance evaluation, and cross-sector collaboration.
3. Ethical Strategy – ensuring data privacy, compliance with Islamic values, and alignment with the principles of *Maqāṣid al-Sharī'ah*.

At the top of the model lies the ultimate goal: Optimizing AI in Mosque Development and Management. This goal reflects a holistic vision where AI is not merely adopted for technological advancement but is integrated thoughtfully to enhance the mosque's role as a center of worship, education, and community service. The model illustrates that by recognizing both opportunities and challenges, and implementing well-balanced strategies across technical, managerial, and ethical dimensions, mosques can harness the full potential of AI in an effective and spiritually aligned manner.

Figure 3: Artificial Intelligence Optimization Model for Mosque Management and Development



CONCLUSION

This study concludes that the implementation of Artificial Intelligence (AI) in mosque management and development presents significant opportunities to enhance efficiency, transparency, and the quality of services. AI can be utilized to facilitate financial management, congregational services, religious outreach (*dakwah*), and the optimization of mosque resources. However, challenges in adopting AI, whether technical, social, cultural, or ethical, must be addressed with careful and prudent strategies. The main challenges include limited technological infrastructure, resistance to change, and the need to ensure that technology remains aligned with Islamic values.

The strategy for AI implementation must involve clear policies, training for mosque administrators, and collaboration among stakeholders to create an environment conducive to the effective and ethical integration of technology. Furthermore, it is crucial to ensure that the use of AI respects the rights of congregants and adheres to the principles of *Maqāṣid al-Sharī'ah*.

As a recommendation, mosque administrators are advised to prepare thoroughly in terms of technological infrastructure and to develop transparent AI usage policies that are in accordance with Islamic principles. They must also ensure that the applied technology reinforces the mosque's role as a center for worship and spiritual guidance. Policymakers should support the development of policies that enable technology integration in mosques without compromising ethical standards, and they should provide adequate training for mosque administrators in utilizing this technology. Collaboration with religious institutions and technology developers is also necessary to ensure a more holistic implementation. Further research is needed to explore additional AI applications that could be employed in the mosque context, such as big data analysis to understand congregant behavior, AI-driven tools to enhance the precision and impact of religious outreach materials, and technologies that foster greater social engagement among congregants. Additionally, further studies should be conducted on the long-term impact of AI implementation in mosques, including its spiritual, social, and cultural implications.

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