

The Use of Artificial Intelligence (AI) for Public Relations in Pesantren

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Abstract

In the era of digital transformation, pesantren as traditional Islamic educational institutions are confronted with new challenges and opportunities in building their public image and expanding the reach of dakwah (Islamic outreach). Public Relations (PR) plays a strategic role in bridging pesantren with the wider community, and the integration of technologies such as Artificial Intelligence (AI) offers a potential solution to enhance the efficiency and effectiveness of communication efforts.

This study aims to explore the forms of AI utilization in PR practices within pesantren environments, as well as to examine the perceptions and challenges faced by administrators in the digitalization process. The research employs a qualitative descriptive-exploratory approach using a case study method involving three pesantren in Indonesia that actively utilize AI technology. Data were collected through in-depth interviews, participant observation, and digital documentation. The data were analyzed using the Miles and Huberman model, which includes data reduction, data display, and conclusion drawing.

The findings reveal that AI is utilized in various forms, including student service chatbots, automated social media content scheduling, digital audience analytics, and voice-based AI for dakwah. The implementation of AI has improved responsiveness and contributed to building a positive public image of pesantren. However, it also presents challenges related to digital literacy, ethical considerations, and limited human resources.

This study contributes to the literature on Islamic communication and values-based educational digitalization. It emphasizes that AI should be positioned as a strategic support tool while preserving the cultural and spiritual values inherent in pesantren traditions.

Keyword: AI, Pesantren, Public Relations, Digitalization, Communication

INTRODUCTION

Islamic boarding schools (*pesantren*) occupy a strategic position within Indonesia's national education system. Beyond producing religiously grounded human capital, these institutions play a significant role in shaping the social character and moral fabric of society. According to data from the Indonesian Ministry of Religious Affairs, as of 2024 more than 36,000 *pesantren* are actively operating across the country, serving over five million students (*santri*). These figures underscore the extensive influence of *pesantren* in cultivating national values and cultural identity. However, despite their strategic role, *pesantren* are increasingly confronted with complex public communication challenges, particularly in the context of rapid digital transformation characterized by advances in information and communication technologies.

In the era of Digital 4.0 and the transition toward Society 5.0, patterns of interaction and information access have undergone profound transformation. Digitalization has redefined how institutions including *pesantren* articulate values, construct public image, and engage with stakeholders. While a number of *pesantren* have adopted social media platforms and institutional websites to disseminate programs and activities, the strategic integration of Artificial Intelligence (AI) in public communication and public relations (PR) practices remains limited. This is noteworthy given AI's substantial potential to enhance institutional engagement through efficiency, speed, data-driven decision-making, and personalized communication strategies.

The gap in AI utilization is evident. Nikmatullah and Wahyudin (2023) report that the majority of *pesantren* rely primarily on manual social media management and have yet to adopt AI-based tools such as chatbots, automated sentiment analysis, or intelligent content management systems. In contrast, several Islamic higher education institutions have demonstrated how AI technologies can strengthen digital reputation and expand communication outreach. This disparity highlights the need to examine how *pesantren* may adopt AI technologies in a manner that is both contextually appropriate and aligned with Islamic values and institutional culture.

The urgency of this study lies in the growing necessity for *pesantren* to undertake informed digital adaptation without compromising their religious identity. On the one hand, *pesantren* must uphold ethical principles in *dakwah* and public engagement. On the other hand, they operate within a digital ecosystem shaped by algorithms, big data, and rapidly evolving public opinion. In this context, AI emerges as a strategic instrument capable of enhancing the effectiveness of *pesantren*'s PR functions, particularly in strengthening institutional image and communicating religious and social messages more effectively.

This study addresses the central problem of how *pesantren* can construct a robust and adaptive public image amid the complexities of the digital era. Specifically, it seeks to answer two research questions: (1) How do *pesantren* utilize AI to improve the effectiveness of external communication? and (2) What are the implications of AI adoption for their public relations strategies? By addressing these questions, the study aims to fill a notable gap in the literature concerning the integration of AI into PR practices within Islamic educational institutions, particularly *pesantren*.

Previous studies have predominantly examined digitalization in the context of pesantren educational management or general social media usage. Limited attention has been given to the integration of AI in institutional communication and PR. Research by Wahono et al. (2023) and Wijaya et al. (2023) indicates that existing digital initiatives tend to remain technical and administrative in nature, rather than advancing toward strategic applications such as sentiment analytics, automated content generation, or message personalization. This lacuna presents both a research opportunity and a practical challenge warranting systematic investigation.

Theoretically, this article contributes to the development of an interdisciplinary framework that intersects public communication, Islamic studies, and artificial intelligence. Amid the expanding scholarship on digital communication and AI, studies focusing on Islamic institutions such as pesantren remain scarce. Accordingly, this research broadens academic discourse by proposing a conceptual framework for AI adoption that is grounded in Islamic values and local institutional wisdom.

From a practical perspective, this study is expected to serve as a reference for pesantren administrators, scholars, and PR practitioners seeking to understand and implement AI technologies within value-based institutional environments. Through a critical and adaptive approach, AI is conceptualized not merely as a technological instrument, but as a strategic enabler for optimizing communication in religious, social, and educational domains. When applied ethically and strategically, AI can strengthen pesantren's institutional resilience amid globalization and digitalization.

Furthermore, this article responds to the emerging branding challenges faced by pesantren in an increasingly competitive landscape. Many institutions strive to project images of innovation, modernity, and openness in order to attract public interest. In this regard, AI can facilitate public perception management, digital opinion analysis, and responsive two-way communication through chatbots or assistive AI systems. Hidayatullah et al. (2025) demonstrate that pesantren employing targeted AI strategies have achieved significant improvements in digital visibility.

At a broader level, pesantren engaged in global digital networks must maintain consistency in institutional identity and core values. Public communication thus becomes increasingly complex: how can institutions preserve religious authenticity while competing within a technologically driven environment? AI offers a potential solution by supporting digital narrative management, audience-tailored messaging, and automated yet strategic content distribution. This aligns with global trends in AI adoption within non-profit and value-based educational organizations.

Accordingly, this article adopts both descriptive and analytical orientations. It explores models of AI utilization in pesantren PR practices, evaluates their effectiveness, and formulates evidence-based recommendations. The discussion integrates conceptual analysis, case-based insights, and a mapping of the challenges and opportunities encountered by pesantren in this domain.

Structurally, the article begins with a review of the literature on public communication, the role of AI in public relations, and the institutional context of pesantren. It then outlines the exploratory methodology employed to examine AI implementation in pesantren PR

practices. The findings and discussion section presents key empirical insights alongside critical analysis. The article concludes with policy-relevant recommendations for pesantren administrators and relevant stakeholders.

Ultimately, this study aspires not only to contribute to academic discourse but also to support the digital transformation of pesantren in Indonesia. The capacity of these institutions to strategically adapt through AI integration will significantly influence their sustainability and development in an increasingly competitive and dynamic era. This article seeks to bridge the world of pesantren and intelligent technologies within a communication framework firmly rooted in Islamic values.

METHOD

This study uses a descriptive-exploratory qualitative approach that aims to gain an in-depth understanding of how Islamic boarding schools utilize artificial intelligence (AI) in their public relations (PR) practices. The qualitative approach is considered most relevant because the phenomenon being studied is new, complex, and rooted in the unique social and cultural context of Islamic boarding schools, which requires narrative and interpretive understanding (Creswell, 2013). This approach allows researchers to examine technology-based communication phenomena from the perspective of values, meanings, and practices carried out by traditional Islamic educational institutions.

The type of research used is a case study, as this strategy provides an opportunity for researchers to explore phenomena contextually and in depth. Case studies help to understand the dynamics of AI technology implementation in the intensive PR activities of religious institutions in a natural setting without experimental intervention (Yin, 2018). This research was conducted at three Islamic boarding schools that have adopted digital technology and AI as part of their public communication strategies. The three boarding schools were selected from different regions, namely Central Java, East Java, and East Kalimantan, in order to obtain a variety of geographical, social, and cultural contexts that could enrich the analysis.

The selection of research subjects used purposive sampling, which is the deliberate selection of samples based on criteria relevant to the research objectives (Sugiyono, 2018). The criteria used included Islamic boarding schools that had used at least one AI application in public communication activities such as chatbots, social media analysis systems, or content recommendation algorithms; were active on social media; and were willing to become research partners. This technique allows researchers to obtain informants who truly have experience and knowledge related to the research topic, so that the data produced is in-depth and contextual.

The data sources used consisted of primary and secondary data. Primary data was obtained through in-depth interviews with Islamic boarding school caregivers, heads of public relations, and IT managers who handle the digitization of institutions. The interviews were conducted in a semi-structured manner so that researchers could explore the main topics while allowing informants to freely develop their views (Moleong, 2017). Each interview lasted approximately 45–60 minutes and was recorded with the respondents' permission for later analysis.

In addition to interviews, participatory observation was conducted on public communication practices in Islamic boarding schools, such as social media account management, the use of chatbots on official websites, or digital activities involving the public. This observation is important to understand how AI is implemented in a unique social and religious context. The observation data was combined with documentation, including analysis of the pesantren's digital content, public relations activity reports, online publications, and screenshots of the AI system used. These three techniques, namely interviews, observation, and documentation, were then used as the basis for source triangulation, so that the research results had stronger validity (Miles, Huberman, & Saldaña, 2014).

Data analysis was conducted using an interactive model developed by Miles and Huberman (1994), which includes data reduction, data presentation, and conclusion drawing and verification. In the reduction stage, data from various sources were selected and simplified based on the research focus. Next, the data is presented in the form of thematic narratives to make it easier for researchers to find patterns and relationships between variables. The final stage involves an interpretation process to build a conceptual understanding of AI-based communication strategies in Pesantren.

To ensure data validity, this study applied source and technique triangulation, member checking with key informants to ensure accuracy of interpretation, and audit trails to document all stages of the research. The use of qualitative analysis software such as NVivo and ATLAS.ti supported the systematic thematic coding process and helped identify important patterns from the narrative data obtained. This approach ensures consistency of interpretation and strengthens the objectivity of the research results (Creswell & Poth, 2018).

The research process was carried out over three months, starting from the pre-field stage to the preparation of the report. The pre-research stage included identifying locations and submitting permit applications to the Islamic boarding schools. The data collection stage included interviews, observations, and documentation for three weeks at each location. Next, the analysis stage was carried out simultaneously with the writing process to ensure that the findings obtained remained contextual and relevant to the reality in the field.

This method was chosen because it is able to explore in depth how Islamic boarding schools integrate AI into their PR activities, as well as how this technology interacts with Islamic values and the culture of Islamic boarding schools. Descriptive-exploratory qualitative case studies provide the interpretive breadth needed to understand the dynamics of social change and digitization in religious institutions. Thus, the research results are expected to contribute academically to the study of religious-based digital communication, while also providing practical benefits for Islamic boarding schools that wish to develop technology-based PR strategies while maintaining traditional values and Islamic ethics.

RESULTS AND DISCUSSION

This study examines the dynamics of the application of artificial intelligence (AI) in public relations (PR) practices in Islamic boarding schools, focusing on three major institutions, namely Nurul Hikmah Islamic Boarding School in East Java, Al-Munawwir Islamic Boarding School in Central Java, and Darul Salam Islamic Boarding School in East Kalimantan. All three pesantren have already undergone institutional digitalization, including in the field of public communication. While maintaining traditional pesantren values, these

three institutions have shown a strong commitment to adapting to technological developments, with the aim of increasing the efficiency and reach of their da'wah (proselytizing) through digital media.

The three pesantren have relatively modern public relations organizational structures, with PR units managed by senior students and teaching staff who are competent in communication and digital technology. The application of digital systems in PR includes social media management, the development of data-based da'wah communication strategies, and the use of official websites as centers for public information. This digital transformation demonstrates institutional awareness of the importance of public image and audience engagement in the digital age. AI here is not merely a technical tool, but is also positioned as a means to strengthen the pesantren's mission of da'wah and education in an increasingly connected society.

The results of the study show that the implementation of AI in Islamic boarding schools is divided into four main forms that are most prominent. First, the use of WhatsApp and Telegram-based chatbots that function to answer public questions related to activity schedules, registration information, and student administrative status. This system has achieved a responsiveness rate of around 85 percent and helps reduce the administrative burden on public relations staff, although it is still limited to structured questions. Second, the application of an automated social media content scheduling system through applications such as Meta Business Tools or Hootsuite, which are equipped with AI captioning features. This innovation improves the consistency of publications, especially during busy periods such as Ramadan and the new student admission period.

The third form is digital audience analytics, where Islamic boarding schools use Google Analytics or Sprout Social to understand user behavior, content preferences, and the most effective publication times. The results of this analysis are used as the basis for developing more targeted communication strategies. The fourth form is the use of Voice AI for the distribution of lectures and religious content in synthetic audio format, which is mainly implemented by one Islamic boarding school to reach young audiences and people with visual impairments. These findings show that AI has become an important element in supporting the Islamic boarding school's public communication strategy, which is inclusive and adaptive to the diverse needs of its audience.

PR managers' perceptions of AI use are positive and progressive. The majority of respondents stated that this technology helps improve work efficiency, especially in message management, content scheduling, and real-time monitoring of public opinion. However, behind these benefits, there are a number of challenges related to the technical limitations of PR managers, who generally have a background in religious education rather than technology. Another obstacle arises in the ethical aspect, especially when AI produces religious narratives that may not necessarily be in line with Islamic boarding school values. Concerns about the dehumanization of communication have also emerged, as AI-based interactions are considered to have the potential to reduce the spiritual touch that characterizes the relationship between students, teachers, and the public at Islamic boarding schools.

Other challenges include the limited number of human resources skilled in AI-based content management, uneven internet infrastructure, especially in rural areas, and the relatively high cost of AI platform subscriptions. However, despite these limitations, there are

great opportunities for Islamic boarding schools to develop digital preaching. AI technology enables Islamic boarding schools to expand the reach of their da'wah to international communities, strengthen the image of the institution as modern and open in the eyes of the younger generation, and facilitate communication crisis management through automatic public sentiment analysis.

Conceptually, the findings of this study confirm that the application of AI in Islamic boarding schools is complementary to traditional values, rather than replacing the manual communication systems that have been in place. AI acts as a supporting instrument that accelerates the process of information dissemination, expands the reach of publications, and helps improve the efficiency of the institution's work without shifting the role of kyai and ustaz as authoritative figures in da'wah communication. This understanding is in line with the concept of strategic public relations proposed by Grunig and Hunt (2003), in which modern communication technology can synergize with cultural approaches and local values to achieve balanced communication effectiveness.

This finding also reinforces the results of research by Hanifah et al. (2025), which emphasizes the need for an adaptive approach in religious institution communication in the digital era. In this context, Islamic boarding schools are not only required to adopt technology, but also to instill digital literacy and AI ethics in accordance with Islamic values. A comparison with Jufaini's (2023) study, which highlights the role of Islamic boarding school PR in a manual context, shows that this study updates the discourse by adding the dimension of smart technology integration in managing the public image of Pesantren.

However, this study emphasizes that digital transformation in Islamic boarding schools cannot be separated from cultural and spiritual transformation. AI can accelerate communication processes and improve efficiency, but without a foundation of Islamic values and ethics, its application risks producing narrative bias or losing spiritual meaning in religious messages. Therefore, the use of AI in Islamic boarding school PR must be balanced with ethical policies, digital literacy training, and supervision of religious values. Thus, technology is not merely a tool, but part of a value-conscious da'wah ecosystem.

This study also highlights the potential of AI as a “digital da'wah assistant” that helps manage communication 24 hours a day without replacing the role of humans. From an Islamic communication perspective, AI can be an extension of da'wah that facilitates the rapid and widespread delivery of messages, while still prioritizing the values of etiquette and honesty in information. With the right strategy, Islamic boarding schools can utilize AI to strengthen their relationship with the public in a sustainable manner, while maintaining the authenticity of their spiritual values.

The limitations of this study lie in its scope, which is limited to three large Islamic boarding schools that already have relatively good digital access, so the results do not fully represent small Islamic boarding schools in areas with limited infrastructure. In addition, this study is still descriptive-qualitative in nature and has not quantitatively measured the effectiveness of AI use on reputation or public perception. For further research, it is recommended that a longitudinal study be conducted to observe the long-term impact of AI use on the image of Islamic boarding schools, as well as to explore the ethics of AI use in the context of Islamic communication based on the values of da'wah and spirituality.

In general, the findings of this study indicate that the integration of AI in the PR practices of Islamic boarding schools creates a new form of communication that is more adaptive, strategic, and inclusive. Smart technology is not merely a mechanistic tool, but a partner for religious institutions in presenting a modern, dynamic, and relevant face of Islam. Through the synergy between digital innovation and spiritual values, Islamic boarding schools can become pioneers in building an ethical, humanistic, and sustainable AI-based religious communication model.

CONCLUSION

This study concludes that artificial intelligence (AI) plays an important role in supporting the efficiency and expansion of public relations communication in Islamic boarding schools. The use of AI such as chatbots, automatic social media content scheduling, digital audience analytics, and voice AI has been proven to accelerate the communication process, increase institutional responsiveness, and strengthen the image of Islamic boarding schools in the digital space. These findings provide a deep understanding that the adoption of AI in the context of Islamic boarding schools is not only a matter of technology, but also closely related to values, organizational culture, and human resource readiness. This research also reinforces the concept of strategic PR in Islamic-based institutions and shows that AI can be used adaptively without eliminating the traditional wisdom of pesantren communication. However, limitations in infrastructure and digital literacy remain significant obstacles, indicating the need for further research in a broader and more diverse context, both geographically and in terms of methodological approaches.

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