

Digital Transformation and Socio-Cultural Change in *Pesantren*: A Systematic Literature Review

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Abstract

Pesantren in Indonesia are currently facing a wave of digital transformation, significantly impacting their socio-cultural and institutional landscapes. This study examines how digital transformation shapes socio-cultural change and what tensions, resistances, and adaptation strategies emerge in the digital transformation of *pesantren* in Indonesia. Using a Systematic Literature Review (SLR) method guided by PRISMA framework, this study synthesizes literature on the adoption of digital technology in *pesantren* from 2015 to 2026. The findings show that digitalization does not replace *pesantren* traditions, but operates through selective adaptation. At the socio-cultural level, digital literacy reshapes *santri* from passive consumers into critical users and producers of information, while digital platforms expand *da'wah*, public communication, and alumni networks. In pedagogy, digital tools support hybrid learning, although face-to-face traditions remain central. At the institutional level, digitalization strengthens governance, accountability, economic development, and institutional branding. However, these changes also generate tensions related to unequal access, infrastructural limitations, and concerns over the erosion of *kiai* authority, *kitab kuning*, and traditional discipline. Overall, *pesantren* respond to digital transformation through negotiated and context-sensitive strategies that preserve identity while accommodating innovation.

Keywords: digital transformation; *pesantren*; socio-cultural change; religious authority; hybrid learning; institutional adaptation; systematic literature review

Introduction

Al-muhafadhbah 'alal qodimis sholih wal akhdzu bil jadidil aslah is a highly popular slogan among *pesantren*. Through this slogan, which literally means “Preserving the good old traditions and adopting better new things,” *pesantren* seek to affirm their philosophical position in the face of change: maintaining a balance between tradition and innovation (Mufron, 2020; Wahidah, 2015). Although this spirit has become part of the everyday running of *pesantren*, realizing it is not always easy, especially when linked to the challenges *pesantren* face in dealing with digital transformation.

Pesantren is the main guardians of the Islamic scholarly tradition. It is in *pesantren* that the Islamic scholarly tradition is studied and developed, and then taught back to the wider community. A traditional atmosphere is also very strongly present in every aspect of *pesantren* life. The *kiai-santri* relationship (and that with other teachers), learning methods, daily practices, and the philosophy of life upheld and taught in *pesantren* is deeply marked by tradition (Khakim, 2020; Rusmiaty et al., 2025). The massive new developments of the digital era are not always hospitable to these traditions.

Historically, *pesantren* is the oldest Islamic educational institutions in Indonesia (Sadali, 2020). Over their long development, *pesantren* has grown into a distinct subculture with a unique socio-cultural, economic, traditional, and worldview order that differs from that of the surrounding society. This position shows that *pesantren* is not merely centers of education for developing and preserving traditional Islamic scholarship, but have become part of Indonesian society's subculture (Husen & Husni, 2025).

Traditionally, the figure of the *kiai* occupies a central position in *pesantren*. The resilience of *pesantren* in maintaining their existence over centuries has depended greatly on the central figure and spiritual charisma of the *kiai* as the holder of the highest religious authority. The traditions of scholarship and everyday socio-cultural order all converge on the figure of the *kiai*. Through the *kiai*, *pesantren* preserve the tradition and scholarly lineage (*sanad*) and protect it from the negative influence of external ideologies and scholarly traditions beyond the *pesantren* (Mahfudloh, 2023). This tradition is what makes *pesantren* relatively closed institutions with a very strong capacity to resist external cultural infiltration. However, entering the second decade of the twenty-first century, *pesantren* is confronted with an unprecedented challenge: digital transformation at a highly massive level and scale.

Although the internet entered Indonesia in the early 1990s (Data Lake Indonesia, 2025), the large-scale digital transformation in Indonesia only occurred when smartphones and social media entered and developed into part of everyday life (Cahyono, 2016; Rafiq, 2020). This wave of transformation has altered almost every aspect of social life, both material, cognitive, and psychological. Smartphones and social media have not only changed the ways people interact, shop, and work, but have also changed the ways they build personal relationships (such as love) and spiritual connections. Social, economic, political, and religious life has been unable to avoid the obligation to

change in line with the major current of digital transformation (Arivianto et al., 2022).

This transformation has also encouraged educational institutions that were formerly regarded as closed, such as *pesantren*, to open their cultural boundaries. *Pesantren* has begun to adopt digital technology as part of their institutional development. This transformation accelerated when the world was trapped in the COVID-19 pandemic (Khoeron et al., 2025; Supandi et al., 2024) in early 2020. The adoption of digital technology, which at first was still only an option for some *pesantren*, has now become a compulsory factor that can no longer be avoided. More broadly, in the post-COVID period, many *pesantren* have begun to view digital technology as a necessity, even as a solution to some problems that are traditionally familiar in the *pesantren* world, such as the use of electronic cards to manage *santri*'s pocket money (Ahsan et al., 2024; Assyifa et al., 2025).

Contemporary studies show that *pesantren* is now actively integrating digital technology into various of their institutional elements, ranging from financial governance (accounting systems) and management operations (Nilasari & Pangestuti, 2022) to economic development through the use of *e-commerce* platforms to promote the economic independence of *pesantren* (Amrozi et al., 2022). Furthermore, the adoption of digital technology has changed the way *pesantren* prepare *santri* to become future preachers (*da'i*). *Santri* are equipped with knowledge and technical skills in using digital media as instruments of communication and dissemination of religious teachings in society (Setiawan & Khiyaroh, 2022).

Although technological integration offers many positive contributions to the world of *pesantren*, digitalization within *pesantren* is not a process without further consequences, and these consequences are often dilemmatic in nature. The adoption of digital technology brings complex sociological and cultural implications. The openness and freedom to access information sources via the internet have changed the way *santri* consume knowledge. *Santri* now have sources of knowledge outside the authority of *kiai* and *ustadz*, which has traditionally been a hallmark of *pesantren* (Abraar, 2025; Halim et al., 2026; Ja'far, 2019). This reality directly challenges the model of knowledge transmission in *pesantren* and poses a threat to the scholarly lineage (*sanad*) of *pesantren*, which has traditionally been exclusive. This phenomenon raises critical questions about how traditional authority is renegotiated, and how *pesantren* balance the

demands of modernization without sacrificing their identity and noble traditions.

The significance of this research lies in the fact that while many independent studies have explored the adoption of technology in *pesantren*, the current body of literature remains largely fragmented. Although many individual studies have explored technology adoption in *pesantren*, most of this literature remains fragmented. Some studies focus more on technical aspects of *e-learning* (Izza, 2026; Maria et al., 2025; Priyatna et al., 2024; Setyaningsih et al., 2019; Syafrin & Muslimah, 2021), while others emphasize the digital economy (Akbar et al., 2025; Chamidi et al., 2025; Lutfia, 2024; Romadloni, 2024) or radicalism prevention (Amrullah, 2025; Irawan & Fauzi, 2025; Suryadinata et al., 2025). To date, there has been no Systematic Literature Review (SLR) that holistically maps the intersection between digital transformation and socio-cultural change in Indonesian *pesantren*. The absence of a systematic study that offers synthesis across the fragmented studies on digital adoption in *pesantren* has resulted in a broken understanding of the strategies of adaptation and socio-cultural shifts occurring in *pesantren* in facing the challenges of digitalization.

Therefore, this Systematic Literature Review (SLR) aims to offer a more integrative synthesis of various studies discussing technology adoption in the *pesantren* world. In particular, this review pays attention to socio-cultural change, institutional adaptation, religious authority, and the negotiation between tradition and modernity, which are formulated in two main questions; first, how does digital transformation foster social change within *pesantren* in Indonesia? Second, what tensions, resistances, and adaptation strategies emerge in the digital transformation of *pesantren*?

This study uses a Systematic Literature Review (SLR) approach to identify, evaluate, and synthesize literature relevant to the research focus (digital transformation and socio-cultural change in *pesantren*). The SLR protocol and reporting were prepared in accordance with the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines to ensure that the academic literature search process is objective and reproducible and to minimize researcher bias.

The literature search was conducted comprehensively using the lens.org database. Lens.org was selected because of its broad coverage of data sources (including Crossref, PubMed, and Microsoft Academic), which is highly effective for capturing both international journal publications and Indonesian national journals. Lens.org was also chosen on the basis that Indonesian-

language articles could be included in the search results. This is important because the focus of the SLR is *pesantren*, and if the selected academic database does not index many Indonesian-language articles, such as Scopus, then a great deal of important information written in Indonesian-language articles will be missed.

The search was conducted by constructing a *Boolean string* that covers three main dimensions: context (*pesantren*), instrument (digital technology), and impact (socio-cultural/authority). The keywords executed in the search engine were:

("pesantren" or "Islamic boarding school" or "dayah") and ("digital" or "internet" or "technology" or "teknologi" or "ICT" or "TIK" or "cyber" or "media") and ("socio-cultural" or "sosial" or "budaya" or "authority" or "otoritas" or "adaptation" or "adaptasi" or "tradition" or "tradisi")

The initial search results (initial search) were specifically filtered for Journal Articles and Conference Proceedings, and limited to the fields of social sciences, humanities, and Islamic education. This process produced 1,029 articles for initial evaluation.

To ensure that the literature analyzed truly addressed the research questions, the inclusion and exclusion criteria were set strictly as follows:

Table 2: Inclusion And Exclusion Criteria

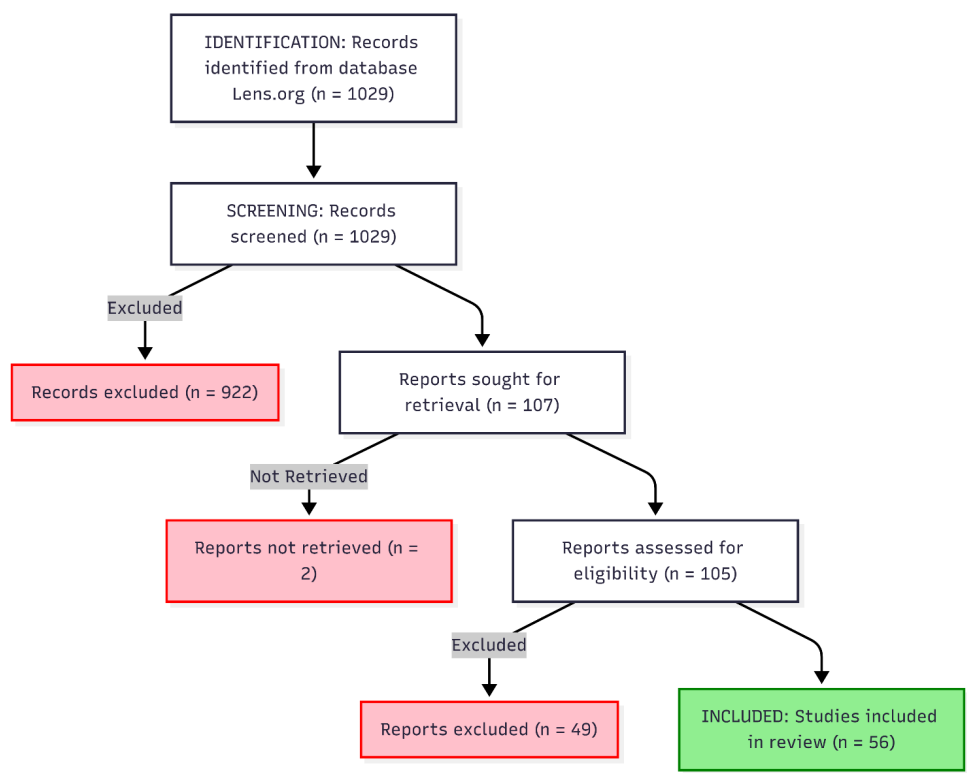
Criteria	Include	Exclude
Publication type	peer-reviewed journal articles, conference papers	non-academic opinion pieces, news reports, book reviews, or book chapters that did not undergo peer review
Language	English, Indonesian	non-English & Indonesian
Type of study	Empirical studies	Non-Empirical Studies
Year	2015–2026	before 2015
Focus	- The article focuses on <i>pesantren</i> or dayah institutions in Indonesia; - Discusses the adoption or integration of information technology, the internet, or social media; - Explicitly examines the impact of such digitalization on socio-cultural interactions, religious	- Only discusses madrasah or non-boarding Islamic schools; - Focuses solely on the technical development of software (IT) without analyzing its socio-cultural impact

	authority (<i>Kiai/Ustadz</i>), and pedagogy	
Full text	available	inaccessible full text

The selection process was carried out through a funneling approach. In the first stage, Title and Abstract Screening, 1,029 articles were evaluated using Artificial Intelligence-based processing (AI-assisted screening) to simultaneously screen for the presence of the three required elements (context, instrument, and impact). This stage excluded 922 articles because they did not meet at least one of the main criteria (for example: discussing *pesantren* but not technology, or discussing technology but not in the context of *pesantren*).

This left 107 articles that were considered highly relevant. In the second stage, Full-Text Screening, 2 articles were excluded because the full text was unavailable. This left 105 articles that could be downloaded and then evaluated manually, resulting in 56 articles that met all eligibility criteria (included).

Figure 1: PRISMA Flow Diagram for literature selection



Data from the 56 selected PDF documents were extracted into a structured matrix that included basic metadata (author name and year of publication) and the main findings classified according to relevant themes. The matrix is presented in the Result sub-section of this article and then analyzed narratively to compose the discussion section of this study.

Result and Discussion

Based on the extraction results from the articles that met the inclusion criteria, the important findings were then organized into a matrix to answer the question of how digital transformation drives socio-cultural change, authority, and the institutional practices of *pesantren*. In line with the SLR method, the contents of the table were compiled from articles that passed the PRISMA screening and were then grouped thematically.

Table 2: Matrix of Findings from Article Extraction

No	Theme	Findings	Article
1	Digital literacy: from consumption to prosumption activities.	1. Digital transformation is most clearly visible in the shift in the role and position of <i>santri</i> from being merely passive users (information consumers) to becoming more critical readers, filters, and producers of information. In other words, <i>santri</i> act simultaneously as both consumers and producers of information, or what in sociological terms is known as prosumption. 2. Training in information literacy, media literacy, and <i>tabayyun</i> is used to equip <i>satri</i> with the ability to recognize hoaxes and disinformation and to reduce internet use as mere entertainment, while also strengthening the resilience of <i>pesantren</i> in facing the threat of radicalism, which often flourishes in cyberspace.	(Azizah & Imron, 2023; Botma & Abdullah, 2022; Fitri et al., 2022; Ni'mah et al., 2022; Rahmawati & Nofiaturrehman, 2022; Sa'id et al., 2022; F. A. Yusuf, 2022)

2	Adoption of digital technology as a medium for <i>silaturahmi</i> , <i>da'wah</i> , public communication, and alumni networking.	1. Through the use of social media, websites, and live streaming, <i>pesantren</i> expand the reach of communication with alumni, parents, prospective <i>santri</i>, and the wider community, both for <i>silaturahmi</i>, <i>pesantren</i> promotion, and as a medium for <i>da'wah</i>. 2. In this context, digitalization does not replace the authority of ulama or <i>kiai</i>, but rather shifts the way they are present in public space and strengthens <i>silaturahmi</i> across distances.	(Amilia et al., 2022; Amin et al., 2022; Fikar, 2022; Guntoro et al., 2022; Ilhamuddin et al., 2022; Pratama & Syam, 2022; Setiawan & Khiyaroh, 2022; Vishkurti, 2022; M. A. Yusuf, 2022; Zafi et al., 2023)
3	Pedagogy, curriculum, and hybrid learning	1. Digitalization most often appears as a form of learning hybridization: a combination of online and offline learning, digital teaching tools, formal-nonformal curricula, and the use of learning applications. 2. Its effectiveness depends heavily on teacher capacity, <i>santri</i> motivation, family support, and infrastructure readiness; 3. In this context, technology functions more as an assisting tool to enrich the variety of teaching and learning methods rather than as a complete replacement for traditional learning methods in <i>pesantren</i>.	(Abdullah & Shunhaji, 2022; Achfandhy & Ariyanto, 2023; Afsari & Wahono, 2022; Alfansyur & Hadian, 2022; Fathullah et al., 2023; Hasanah & Fanani, 2022; Hikmah et al., 2023; Jannah & Wantini, 2022; A. Kholifah, 2022; S. Kholifah, 2022; Lisnasari et al., 2023; Midroro et al., 2022; Nisa' & Lestari, 2023; Nurrohman & Prastowo, 2022; Rahman & Husin, 2022; Shidiq & Mubin, 2022)
4	Digitalization in governance and accountability of administrative	1. The use of applications, websites, Telegram bots, and digital payment systems primarily changes the way <i>pesantren</i> manage services,	(Ahmad & Munastiwi, 2022; Azis et al., 2022; Hamzah et al., 2022; Ilyas et al.,

	services and <i>santri</i> mentoring.	monitor <i>santri</i> , and build transparency. 2. Digitalization in this theme appears more as a restructuring of management and accountability than as a direct pedagogical change.	2022; Latar et al., 2022; Wati et al., 2022)
5	Digitalization for the development of the digital economy, entrepreneurship, and institutional branding	1. Digital transformation opens new economic orientations through e-commerce, digital marketing, fintech, and <i>santripreneurship</i> . 2. <i>Pesantren</i> is moving from an economic pattern that is primarily based on local relations toward a digital market ecosystem, generally through mentoring, training, and collaboration with external parties.	(Adinugraha et al., 2022; Amrozi et al., 2022; Gunawan et al., 2022; Hidayat et al., 2022; Maimun et al., 2022; Maisaroh et al., 2022; Maslahah, 2022; Sumarmi et al., 2022; Syamsu et al., 2022)
6	Socio-cultural impacts: religious authority, moderation, tradition, and socio-cultural resilience	1. Digitalization in <i>pesantren</i> does not appear in a free and uncontrolled form, but rather as a selective negotiation while still maintaining the traditional values of <i>pesantren</i> , the authority of <i>kiai</i> , gender norms, and traditional identity. 2. Technology is accepted as long as it supports moderation, resilience, and the continuity of <i>pesantren</i> as a sub-culture with its own distinct characteristics; 3. when it is considered to threaten tradition or discipline, it is limited, monitored, or positioned only as an assisting tool.	(Ayu et al., 2024; Farih et al., 2022; Faruq et al., 2022; Harahap et al., 2022; S. Kholifah, 2022; Maslahah, 2022; Mursyidi, 2023; Saefudin et al., 2022; Taufikin, 2022)

Overall, the pattern of findings shows that digital transformation in *pesantren* tends to proceed as a selective adaptation process, rather than as a total change in the working patterns and ways of life of *pesantren*. Digital innovation is accepted insofar as it helps *pesantren* respond to the demands of the times, improve efficiency, and expand its social reach while at the same time preserving

the traditions that constitute the core identity of *pesantren*. This pattern of transformation is a concrete form of the well-known *pesantren* motto: *al-muhafadhbob 'alal qodimis sholih wal akhdzu bil jadidil aslah*. These findings clearly show that digitalization is understood as an ongoing process of negotiation between openness and restriction, between modernization and preservation, and between technological flexibility and traditional discipline.

Discussion

The various findings presented by the academic works reviewed in this SLR indicate that digital transformation in *pesantren* cannot be understood as a linear and uniform process of change. Rather, this transformation is best read as a multidimensional negotiation process between technological adoption, institutional needs, and a commitment to maintaining religious authority and the socio-cultural traditions of *pesantren*. The literature reviewed in this SLR consistently shows that technology adoption in *pesantren* is never total. What occurs is the careful adoption of digital technology, with attention to adjustments to the institutional and traditional context of *pesantren*. *Pesantren* also do not hesitate to impose various restrictions on the use of technology when it is considered to disturb tradition, discipline, or established hierarchies of authority. Therefore, it is highly inaccurate to view *pesantren* as institutions that are resistant to change. *Pesantren*, in their own unique way, are able to manage change without losing their identity and traditions (Faruq et al., 2022; S. Kholifah, 2022; Maslahah, 2022).

Socio-cultural transformation in *pesantren*

The findings from the various literatures reviewed in this SLR show that the most visible socio-cultural change in *pesantren* is not merely an increase in the use of technology and digital platforms, but a change in the culture of *santri*, *ustadz*, and the institution in its relationship to knowledge development, public relations, and everyday life in *pesantren* (S. Kholifah, 2022; Taufikin, 2022).

1) Transfer of knowledge

In the context of knowledge development, *santri* are no longer positioned merely as passive recipients (objects) of information, but also as subjects who need to develop critical awareness through digital literacy, information verification skills, and awareness of the risks of hoaxes and disinformation. Nevertheless, this critical awareness cannot be understood as a threat to tradition. On the contrary, it appears to be more focused on preserving and

protecting the traditional knowledge heritage of the *pesantren* model (*kitab kuning*, scholarly lineage) from the possibility of being damaged or contaminated by various forms of information and knowledge from outside the *pesantren* that enter massively through digital spaces, social media, and other virtual media. In this context, the traditional authority of knowledge held by the *pesantren* is not eroded. *Kiai* and *ustadz* remain the central sources of religious legitimacy even though *santri* now have broader access to sources of knowledge (Azizah & Imron, 2023; Botma & Abdullah, 2022; Fitri et al., 2022; Ni'mah et al., 2022; Rahmawati & Nofiaturrehman, 2022; Sa'id et al., 2022).

This digital transformation also appears in the form of upgrading competencies, knowledge, and skills considered relevant for *pesantren*. *Santri* and *ustadz* are equipped with the skills to use technology and digital platforms, both for learning purposes, *da'wah*, and various other needs related to *santri*, such as communication with parents and daily financial management. Digitalization has shifted some educational practices, public religious education, and daily interaction or communication from an oral-traditional basis to a digital basis that offers convenience, speed, and wide-reaching connectivity. The findings in the literature reviewed indicate that *pesantren* is increasingly adopting blended or hybrid learning models through the use of Zoom, WhatsApp, and digital modules as a response to changing demands (Abdullah & Shunhaji, 2022; Afsari & Wahono, 2022; Fathullah et al., 2023; Lisnasari et al., 2023; Nisa' & Lestari, 2023; Nurrohman & Prastowo, 2022; Shidiq & Mubin, 2022).

What remains consistent in every technology adoption in *pesantren* is that, whatever the form, this adoption is always kept within certain limits so that it does not eliminate the traditional heritage of *pesantren* that is considered important. Although digital learning has begun to be widely implemented, the face-to-face learning tradition that is the hallmark of *pesantren*—such as *sorogan*, *bandongan*, direct supervision, and habituation to *adab* (moral and spiritual etiquette)—cannot be moved to a digital screen. These practices require physical meetings as part of the spiritual tradition of *pesantren* (Faruq et al., 2022; S. Kholifah, 2022).

2) Institutional practice

The findings of this SLR clearly show that one of the most widely practiced forms of digital transformation in *pesantren* is the change in institutional governance. The use of various management applications, digital payment systems, websites, financial management applications, and various digital-based administrative tools has made *pesantren* governance more

transparent, efficient, and accountable. This change shifts governance, which was previously based on personal relationships, trust, and emotional closeness, toward a more procedural and, to a certain extent, relatively more impersonal form (Ahmad & Munastiwi, 2022; Azis et al., 2022; Hamzah et al., 2022; Ilyas et al., 2022; Latar et al., 2022; Wati et al., 2022). This includes the adoption of Telegram bots for 24/7 school administration inquiries (Latar et al., 2022), automated digital tuition (SPP) systems (Azis et al., 2022), and web-based portal reports (Ahmad & Munastiwi, 2022).

Another institutional practice worth highlighting is the development of the *pesantren* economy. Digital transformation has brought the *pesantren* economy toward a digital economic ecosystem. This change creates major opportunities for *pesantren* to expand their consumer reach. The *pesantren* economy no longer has to rely solely on consumers within the *pesantren* or the surrounding community, but can reach broader markets through e-commerce platforms (Amrozi et al., 2022; Hidayat et al., 2022; Maimun et al., 2022; Maisaroh et al., 2022; Sumarmi et al., 2022; Syamsu et al., 2022).

The subsequent consequence is that *pesantren* has begun to engage in digital marketing, e-commerce, and digital payments. This economic digitalization creates opportunities for *pesantren* to expand funding sources, equip *santri* with digital entrepreneurial skills, and increase institutional independence. Of course, challenges always come together with opportunities. *Pesantren* now have to confront the logic and demands of capitalism and market pragmatism, which do not always align with the philosophical values of *pesantren* (Adinugraha et al., 2022; Midroro et al., 2022).

3) A broader public relationship

The use of social media, websites, and various online platforms by *pesantren* is able to transform the relationship between *pesantren* and the wider community. If previously *pesantren* relied more on direct relations with the community, alumni networks spread across the country, or the reputation of the *kiai* in the eyes of followers or admirers, now the relationship between *pesantren* and a wider public is also built through digital content, visual posts, and the presence of online entities as the official representatives of *pesantren* (Amilia et al., 2022; Amin et al., 2022; Fikar, 2022; Guntoro et al., 2022; Ilhamuddin et al., 2022; Pratama & Syam, 2022; Vishkurti, 2022; M. A. Yusuf, 2022).

Da'wah practices that previously took place predominantly face-to-face are now also present through YouTube, Instagram, live streaming, podcasts, and various shorter and more easily circulated forms of digital content. *Kiai* and

ustadz are still present directly in sermon activities and other religious events, but these activities are now also complemented by digital *da'wah* forms that can reach audiences more broadly. In this way, the authority of the *kiai* is not lost; rather, it is recontextualized within digital spaces. Of course, there are further consequences; religious authority, which traditionally held a relatively central, even absolute, position, must now enter a free-market of information in which various ideas and forms of knowledge compete for influence. Moreover, the characteristics of digital media, which prioritize speed, viral culture, avoid depth, and worship appearance, clearly pose a distinct challenge for the *pesantren* community (Setiawan & Khiyaroh, 2022; Zafi et al., 2023).

This change has a dual impact. On the one hand, *pesantren* gain opportunities to expand their *da'wah* audience, reach prospective new *santri*, strengthen *pesantren* branding, and maintain more intense relations with parents and alumni. On the other hand, *pesantren* must also deal with the rules of the digital world, which place speed as its main pillar, prioritize appearance, and demand openness. On the one hand, this situation brings its own advantages to *pesantren*. The existence of *pesantren* becomes more widely recognized by the public. But on the other hand, *pesantren* also become more vulnerable to external judgment and scrutiny (Amilia et al., 2022; Amin et al., 2022; Fikar, 2022; Guntoro et al., 2022; Ilhamuddin et al., 2022; Pratama & Syam, 2022; Setiawan & Khiyaroh, 2022; Zafi et al., 2023).

All these changes clearly show that the process of digitalization has changed the face of *pesantren*, not only institutionally but also socio-culturally. Institutional transformation is visible in the shift in how *pesantren* manage financial administration, services, public relations, and the economic ecosystem. Socio-cultural transformation is visible in the shift of learning activities from traditional forms toward blended or hybrid learning, as well as in everyday interactions within *pesantren*. The challenge for *pesantren*, of course, is how to position the process of digitalization so that it aligns with the values that have traditionally been considered important in the *pesantren* world. The findings in the literature show that, so far, what has happened is the adoption of digital technology as long as it remains compatible with the values and traditions considered important by *pesantren* (Abdullah & Shunhaji, 2022; Ahmad & Munastiwi, 2022; Faruq et al., 2022; Fathullah et al., 2023; Hamzah et al., 2022; Ilyas et al., 2022; S. Kholifah, 2022, 2022; Latar et al., 2022; Lisnasari et al., 2023; Nisa' & Lestari, 2023; Nurrohman & Prastowo, 2022; Shidiq & Mubin, 2022).

Tensions, Resistance, and Adaptation Atrategies

In contrast to the common assumption that views *pesantren* as closed systems that reject change, the various findings in the SLR literature instead show that *pesantren* do not close themselves off from change, especially in relation to the adoption of digital technology. Of course, there is resistance from *pesantren*, but this resistance is more often selective than total. Restrictions on gadget use, supervision of internet access, and cautious attitudes toward social media are all carried out to ensure that *pesantren* retain control over change. *Pesantren* do not reject digital technology as a form of development, but they seek to ensure that the adoption of digital technology does not weaken or damage the traditional heritage of *pesantren* that is considered important, such as the authority of the *kiai*, the habituation of *adab* (moral and spiritual etiquette), or scholarly lineage (*sanad*) (Ayu et al., 2024; Farih et al., 2022; Faruq et al., 2022; Harahap et al., 2022; S. Kholifah, 2022; Maslahah, 2022; Mursyidi, 2023; Saefudin et al., 2022; Taufikin, 2022).

Of course, the digital transformation currently taking place in the world of *pesantren* does not occur without tensions. This tension is evident, for example, in unequal access to technology. Various literature studies included in this SLR show that access to digital resources and technologies is not always evenly distributed. However, it is inaccurate to interpret the slow pace of digitalization in *pesantren* as merely a sign of cultural backwardness. On the contrary, many *pesantren* are actually quite open to technology, but that openness is limited by scarce resources (Abdullah & Shunhaji, 2022; Alfansyur & Hadiyan, 2022; Fathullah et al., 2023; A. Kholifah, 2022; Lisnasari et al., 2023; Rahman & Husin, 2022). Here, a critical distinction must be drawn between instrumental and epistemic adoption. For instrumental adoption (such as administrative governance, tuition payment portals, and e-commerce), the primary barriers appear to be structural rather than ideological, stemming from financial constraints, uneven internet connectivity, and limited human resource capacity rather than cultural backwardness (Abdullah & Shunhaji, 2022; Alfansyur & Hadiyan, 2022; Fathullah et al., 2023; A. Kholifah, 2022; Lisnasari et al., 2023; Rahman & Husin, 2022). Conversely, regarding epistemic and pedagogical adoption (such as entirely online lectures or the virtualization of *tahfidz* [Quranic memorization]), *pesantren* choose to be selective, guided by ideological and spiritual values. *Pesantren* intentionally restrict or resist complete virtualization due to the belief that *barakah* (spiritual blessing), moral transmission, and the verification of scholarly lineage (*sanad*) necessitate physical proximity, face-to-

face interaction (*sorogan*), and direct presence (Nurrohman & Prastowo, 2022; Taufikin, 2022). Consequently, the slow or selective adoption of technology is a hybrid outcome of structural limitations on the one hand, and deliberate spiritual safeguards on the other.

More broadly, this issue of unequal access is caused not only by limited digital infrastructure in *pesantren* but also by uneven human resource capacity and capability. Many *pesantren* have very limited digital infrastructure. This means that not all *ustadz* and *santri* have equal access to digital resources. The limited capacity of digital infrastructure is unable to reach and serve all the needs of *ustadz* and *santri*, both in pedagogical activities and in everyday communication activities. From the human resources side, the mastery of digital knowledge and skills among *ustadz* and *santri* is also uneven. This situation makes the gap in access to digital technology increasingly apparent. Digital transformation, therefore, actually generates new inequality problems or widens existing gaps (Abdullah & Shunhaji, 2022; Fathullah et al., 2023; A. Kholifah, 2022; Lisnasari et al., 2023; Rahman & Husin, 2022).

In addition to capacity issues, tensions are also visible in the concern of some parties that the digitalization process may reduce charisma and reduce the authority of the *kiai*, weaken the value of *kitab kuning*, or push *pesantren* into entities subject to market logic. *Pesantren* address these concerns by taking a middle path, adopting technology in a limited way while ensuring that the traditional authority of the *kiai* remains the main reference in every activity in *pesantren*. This strategy shows that what *pesantren* is doing is nothing other than an effort to maintain their identity without becoming exclusive or rejecting change. Through selective adoption of technology, *pesantren* seek to reaffirm their philosophical position once again: preserving the good old traditions and taking the better new things (Faruq et al., 2022; S. Kholifah, 2022; Maslahah, 2022; Mursyidi, 2023).

The findings in this SLR study show that *pesantren* is not in a situation of choosing between “tradition” and “modernity” in a black-and-white manner. What is happening is an ongoing process of negotiation between openness and control, efficiency and authority, innovation and continuity. This phenomenon further affirms that *pesantren* is not merely objects within the broader flow of digital transformation, but actors that actively select and control change under the umbrella of their life philosophy and traditional values (Faruq et al., 2022; S. Kholifah, 2022; Maslahah, 2022).

Mediatization of Religion and Institutional Buffering within the Dialectical Space of *Pesantren*

The findings of this literature review affirm that digital transformation in *pesantren* is not a linear process of cultural replacement, but rather an ongoing process of negotiation to ensure that the adoption of technology and digital culture does not erode the noble values and traditions of *pesantren*. Through the perspectives of the Theory of Mediatization of Religion and Institutional Buffering Theory, these findings will be analyzed to explain why *pesantren* is highly responsive and adaptive to certain digital aspects, while simultaneously maintaining their spiritual and philosophical independence from technological intervention.

1) Mediatization and Transmediation of Religious Authority in the Digital Era

In the landscape of a modern media-saturated society, Stig Hjarvard explains that religious institutions gradually become subject to media logic, a process he terms the mediatization of religion. This media logic operates through three primary metaphors of media: as a conduit delivering messages, as a language framing aesthetic expressions and narratives, and as a new environment assuming part of the social functions of traditional religious institutions (Hjarvard, 2011, 2012). The process of religious mediatization through these three metaphors is clearly evident within the *pesantren* environment. This process operates through the expansion of *da'wah* media, public communication, and alumni networks by utilizing visual-interactive platforms such as YouTube and Instagram (Amin et al., 2022; Setiawan & Khiyaroh, 2022). A portion of *pesantren* activities previously rooted strongly in oral traditions and physical gatherings has now been migrated to digital platforms, expanding the reach of *pesantren* beyond their geographical boundaries.

However, mediatization in *pesantren* does not automatically produce what Dayat and Katz (as cited in Hoover, 2006) refer to as 'disintermediation,' which denotes the phenomenon of religious figures losing their function as intermediaries in conveying and shaping religious values. Although digital technology enables *santri* to access sources of knowledge outside the supervision of *kiyai* (Abraar, 2025; Halim et al., 2026), *kiyai* have never lost their legitimacy. Instead, what occurs is what Pauline Cheong et al. refer to as strategic arbitration (Cheong et al., 2011) and transmediation of authority (Cheong, 2011). This strategy is evident in *pesantren's* efforts to control *santri's* digital access and act as knowledge mediators by instructing *santri* in filtering information and

knowledge acquired from the internet. *Pesantren* also establish their own creative media agents—such as the formation of digital public relations divisions or 'cyber *pesantren*' (Hasanah & Fanani, 2022; Ilhamuddin et al., 2022). In this context, *kiai* and *ustadz* reclaim control over their public representation by reformatting traditional knowledge into digital content aligned with the characteristics of new media without losing its scholarly essence. This process demonstrates the formation of a religious 'third space' (Hoover & Echchaibi, as cited in Campbell, 2013), where media logic intersects and is negotiated with the traditional logic of *pesantren*.

Furthermore, *santri* are no longer passive consumers of information but have also developed the ability to reproduce various information and knowledge obtained from the internet. This capability is known in digital sociology studies as prosumption (Fuchs, 2010). *Santri* actively filter hoaxes, produce content on religious moderation, and counter radicalism content (Azizah & Imron, 2023; Ni'mah et al., 2022; Sa'id et al., 2022). This activity represents a tangible manifestation of the Religious Social Shaping of Technology (SST) as formulated by Heidi Campbell (2010). The *pesantren* community is not merely passively shaped by technology; rather, it actively directs technology to align with the philosophical values of *pesantren*. Through the provision of information literacy and the concept of *tabayyun* taught by *pesantren*, *santri* are formed into digital subjects equipped with the ability to utilize new media as instruments of *da'wah* while safeguarding the stronghold of knowledge and religious tradition.

2) Institutional Buffering Through the Balance between Flexibility of Rules and Protection of *Pesantren's* Spiritual Tradition

Beyond mediatization practices, it is particularly compelling to examine *pesantren's* reluctance or resistance toward full digital adoption, especially within the pedagogical realm. This dynamic can be analyzed through the lens of modern institutional theory regarding the formal structure of organizations, although, as discussed at the end of this analysis, this theory is not entirely capable of satisfactorily capturing this phenomenon. This theory explains that organizations operating within complex institutional environments are frequently confronted with tensions between demands for technical efficiency/modernity (which are often ceremonial in nature) and actual internal operational requirements (Meyer & Rowan, 1977; Scott, 2014; Thompson, 1967). In this context, the demand for digital transformation serves as a kind of 'institutional myth' that appears rational. Digital transformation becomes a symbol of modernity, accountability, and progress that *pesantren* seemingly must

adopt to be recognized as legitimate in the eyes of the state and the general public (Meyer & Rowan, 1977).

To ensure this ceremonial conformity without undermining their foundational roots, organizations subsequently employ 'decoupling' tactics and construct 'buffering' to protect their technical core from external uncertainties (Meyer & Rowan, 1977; Thompson, 1967). In the context of *pesantren*, the technical core consists of the distinctive *pesantren* tradition in the process of knowledge transfer, character building, preservation of scholarly lineages (*sanad*), and reverence for the *kiai*. This core tradition of *pesantren* mandates physical presence and direct interpersonal proximity that cannot be evaluated through pure parameters of technological efficiency.

The findings of this study reveal a distinct division between the adoption of digital technology in purely administrative domains and substantive pedagogical domains. In administrative domains—such as finance, learning administration, tuition (SPP) payments, report management, and the development of *pesantren* business units—*pesantren* has rapidly adopted digital technology (Amrozi et al., 2022; Azis et al., 2022; Latar et al., 2022; Nilasari & Pangestuti, 2022). This adoption exhibits isomorphism aimed at constructing an institutional image that is modern, professional, and accountable to external stakeholders, *santri* parents, and banking institutions (Wati et al., 2022). Conversely, in substantive pedagogical domains—such as learning *kitab kuning*, *sorogan*, *bandongan*, Quranic memorization deposits (*tahfidz*), and daily discipline enforcement—*pesantren* exercise selective resistance, strict restrictions, or outright refusal toward full digitalization (Nurrohman & Prastowo, 2022; Taufikin, 2022). *Pesantren* decline to relocate *sorogan* recitations entirely into digital spaces due to the religious conviction that the essence of character education and spiritual blessings (*barakah*) can only flow seamlessly through physical face-to-face presence and the obedient handshake between teacher and student.

Through these tactics, *pesantren* successfully decouple their administrative accountability structure (via complete adoption of digital technology) from their daily practical life (which remains traditional-spiritual). However, as indicated in the preceding explanation, this theory tends to view *pesantren's* willingness to adopt digital technology merely as a gesture to preserve public image and legitimacy in the eyes of the public. This perspective is not entirely accurate. The adoption of digital technology in administrative domains by *pesantren* is frequently driven by the internal needs of the *pesantren* themselves. The

implementation of tuition payment mechanisms via digital applications, Telegram bots, financial management, and digital economic development is not merely an effort by *pesantren* to conform to public demands, but is also grounded in *pesantren's* internal necessities for administrative efficiency and economic self-reliance.

Conclusion

The findings of this SLR affirm that digital transformation in *pesantren* is a complex and non-linear process. *Pesantren* is not passive in the face of change, but they also do not become absorbed by it. They manage modernity in a distinctive way, namely by integrating new things into an older framework that is still considered valid and meaningful. It is clear that the digitalization of *pesantren* is not only about providing devices, applications, or internet infrastructure, but also about socio-cultural change that will always accompany every process of digitalization. Indeed, the success of digital transformation in *pesantren* will be strongly determined by its ability to integrate digital technology into the philosophical system and socio-cultural ecosystem that *pesantren* has possessed from the beginning.

Ultimately, this study shows that digital transformation in *pesantren* is an ongoing process within a dialectical space between modernity and tradition, between opportunity and threat, openness and restriction, and between the desire to adapt and the capacity to maintain identity. In academic tradition, the phenomenon of digital transformation in *pesantren* can be seen as a primary locus for observing and assessing how traditional religious institutions survive, adapt, and change in the digital era without completely losing their distinctive traditional heritage.

Bibliography

- Abdullah, Y., & Shunhaji, A. (2022). Manajemen Pembelajaran Daring Program Tahfizh Al-Qur'an Pada Masa Kenormalan Baru Di Al-Wafi Islamic Boarding School. *Thawalib: Jurnal Kependidikan Islam*, 3.0(2.0), 103.0-118.0. <https://doi.org/10.54150/thawalib.v3i2.79>
- Abraar, M. (2025). Digitalisasi Kitab Kuning: Analisis Dampak Aplikasi Fikih Digital Terhadap Otoritas Keilmuan Pesantren. *AN-NUR: Jurnal Pendidikan Dan Pembelajaran*, 1(2), 182–196. <https://doi.org/10.65802/an-nur.v1i2.44>
- Achfandhy, M. I., & Ariyanto, B. (2023). Psikologi Komunikasi Sebagai Pendekatan Fase Adaptasi di Era Pasca Covid-19. *IKOMIK: Jurnal Ilmu*

- Komunikasi Dan Informasi*, 3.0(1.0), 20.0-27.0.
<https://doi.org/10.33830/ikomik.v3i1.3763>
- Adinugraha, H. H., Supriyanto, E., & Effendi, B. (2022). Pendampingan Peningkatan Kemampuan Kewirausahaan Bagi Santri Pondok Pesantren Bustanul Mansuriyah. *Jumat Keagamaan: Jurnal Pengabdian Masyarakat*, 3.0(1.0), 1.0-4.0. https://doi.org/10.32764/abdimas_agama.v3i1.2091
- Afsari, N. I., & Wahono, H. T. T. (2022). Pengaruh Model Pembelajaran Blended Learning Terhadap Prestasi Belajar IPS Siswa Kelas VIII. *Journal of Education Research*, 3.0(3.0), 101.0-105.0. <https://doi.org/10.37985/jer.v3i3.83>
- Ahmad, N. F., & Munastiwi, E. (2022). Optimization of The Madani Bintang Islamic Boarding School Aplication in The Implementation of Education Accountability. *J-MPI (Jurnal Manajemen Pendidikan Islam)*, 7.0(1.0), 34.0-43.0. <https://doi.org/10.18860/jmpi.v7i1.16171>
- Ahsan, M. N., Imroni, M. H., & Kurnia, S. H. A. (2024). Dampak Positif Implementasi Virtual Account Santri di Pesantren. *Management of Education: Jurnal Manajemen Pendidikan Islam*, 10(2), 108–115. <https://doi.org/10.18592/moe.v10i2.12456>
- Akbar, M. A., Musthofa, M. A., & Al-Munip. (2025). Model Pemberdayaan Ekonomi Santri Berbasis Digital Entrepreneurship melalui Pelatihan TikTok Seller di Lingkungan Pesantren. *Jurnal Sosial Dan Humaniora*, 1(2), 65_71-65_71.
- Alfansyur, A., & Hadiyan, M. R. (2022). *The Implementation of Limited Direct Learning Method in Madrasah to Support Students' Literacy*. <https://doi.org/10.2991/assehr.k.220104.033>
- Amilia, F., Rowindi, G., & Mubaroq, S. (2022). Pemanfaatan Publikasi Di Media Sosial Untuk Lembaga Pendidikan. *Dinamisia: Jurnal Pengabdian Kepada Masyarakat*, 6.0(5.0), 1141.0-1147.0. <https://doi.org/10.31849/dinamisia.v6i5.9355>
- Amin, N., Septiansyah, Moch. A. L., Sa'dullah, M. H., & Syaifuddin, S. (2022). Instagram as a Da'wah Medium for Al-Hasany Foundation Islamic Boarding School. *KOMUNIKA: Jurnal Dakwah Dan Komunikasi*, 16.0(1.0), 41.0-50.0. <https://doi.org/10.24090/komunika.v16i1.5120>
- Amrozi, Y., Putranto, H. A., Amin, F. M., & Az-Zahra, T. S. (2022). Assistance of Batik Tulis in Nurul Huda Islamic Boarding School Situbondo through E-Commerce to Improve Socio-Economic Levels. *Engagement: Jurnal Pengabdian Kepada Masyarakat*, 6.0(1.0), 187.0-203.0. <https://doi.org/10.29062/engagement.v6i1.1168>

- Amrullah, A. (2025). Peran Pesantren dalam Menangkal Radikalisme Digital: Studi Terhadap Santri Era Media Sosial. *MODELING: Jurnal Program Studi PGMI*, 12(2), 183–196. <https://doi.org/10.69896/modeling.v12i2.2934>
- Arivianto, S., David, A., Syahputra, Y., & Nur, M. S. S. (2022). Dampak Teknologi pada Implikasi Sosial, Kultural, dan Keagamaan dalam Kehidupan Manusia Modern. *Moderasi: Jurnal Kajian Islam Kontemporer*, 1(01). <https://journal.forikami.com/index.php/moderasi/article/view/497>
- Assyifa, M. R., Susanto, R., & Pradana, A. I. (2025). Implementasi Sistem Pembayaran Digital Rfid pada Kantin Pesantren. *DutaCom*, 18(2). <https://doi.org/10.47701/dutacom.v18i2.5106>
- Ayu, K. R., Felayati, S. A., Fuaddah, A., & Herutomo, C. (2024). Language And Communication With A Gender Perspective At Pesantren (Boarding School) Al-Ikhsan, Purwokerto. *International Journal of Innovative Research in Multidisciplinary Education*, 3.0(2.0). <https://doi.org/10.5281/zenodo.10634064>
- Azis, D., Tajuddin, A., & Mallu, S. (2022). Sistem Informasi Sumbangan Pembinaan Pendidikan Berbasis Web Pada Pondok Pesantren Tahfizhul Quran Al-Imam Ashim Makassar. *Jurnal Informatika Progres*, 14.0(1.0), 16.0-24.0. <https://doi.org/10.56708/progres.v14i1.302>
- Azizah, N., & Imron, A. (2023). Moderation of Religion in the Post Truth Era: Identity Search Against Hoaxes at the Al-Asror Islamic Boarding School, Gunungpati, Semarang. *Zenodo (CERN European Organization for Nuclear Research)*. <https://doi.org/10.5281/zenodo.7739350>
- Botma, A., & Abdullah, A. W. (2022). Penguatan Literasi sebagai upaya preventif terhadap Radikalisme-Ekstremisme Beragama di Pondok Pesantren Assalaam Manado. *Jurnal Ilmiah Iqra'*, 16(1), 39–54. <https://doi.org/10.30984/jii.v16i1.1887>
- Cahyono, A. S. (2016). Pengaruh Media Sosial Terhadap Perubahan Sosial Masyarakat di Indonesia. *Publiciana*, 9(1), 140–157. <https://doi.org/10.36563/publiciana.v9i1.79>
- Campbell, H. A. (2010). When Religion Meets New Media. In *When Relig. Meets New Media* (p. 219). Routledge Taylor & Francis Group. Scopus. <https://doi.org/10.4324/9780203695371>
- Campbell, H. A. (Ed.). (2013). *Digital Religion: Understanding Religious Practice in New Media Worlds*. Routledge.

- Chamidi, A. L. C., Huda, S., Sujianto, A. E., Subagiyo, R., & Asiyah, B. N. (2025). Digital transformation of islamic boarding school-based MSMEs in improving local economic competitiveness: A systematic literature review (SLR). *Jurnal Pendidikan Ekonomi (JUPE)*, 13(3), 200–211. <https://doi.org/10.26740/jupe.v13n3.p200-211>
- Cheong, P. H. (2011). Religious Leaders, Mediated Authority, and Social Change. *Journal of Applied Communication Research*, 39(4), 452–454. <https://doi.org/10.1080/00909882.2011.577085>
- Cheong, P. H., Huang, S., & Poon, J. P. H. (2011). Religious Communication and Epistemic Authority of Leaders in Wired Faith Organizations. *Journal of Communication*, 61(5), 938–958. <https://doi.org/10.1111/j.1460-2466.2011.01579.x>
- Data Lake Indonesia. (2025, October 3). Sejarah Perkembangan Internet di Indonesia. *Data Lake Indonesia*. <https://datalake.id/sejarah-internet-di-indonesia/>
- Farih, A., Supriadi, E., & Nurkhanif, M. (2022). Religious Moderation at Pesantren Al-Hikmah 1 Benda-Brebes. *MIMBAR: Jurnal Sosial Dan Pembangunan*, (0), 99–105. <https://doi.org/10.29313/mimbar.v0i0.8565>
- Faruq, A. K., Hepni, H., & Sujiwo, S. (2022). Technology and Noble Traditions in Pesantren. *Edukasi Islami: Jurnal Pendidikan Islam*, 11.0(2.0). <https://doi.org/10.30868/ei.v11i02.2385>
- Fathullah, M. N., Ulfiah, U., Mulyanto, A., Gaffar, M. A., & Khor, A. (2023). Management of Digital Literacy-Based Work Practice Training in The Boarding School Environment. *Munaddhomah: Jurnal Manajemen Pendidikan Islam*, 4.0(1.0), 1.0-11.0. <https://doi.org/10.31538/munaddhomah.v4i1.230>
- Fikar, Z. (2022). Dakwah Ulama Dayah Aceh di Masa Pandemi. *Panangkaran: Jurnal Penelitian Agama Dan Masyarakat*, 6.0(1.0), 132.0-146.0. <https://doi.org/10.14421/panangkaran.v6i1.2788>
- Fitri, F., Fitri, A. N., & Ni'mah, N. (2022). Strategy of Fadhlul Fadhlān Pesantren in Developing Media Literacy. *Santri: Journal of Pesantren and Fiqh Sosial*, 3.0(2.0), 191.0-206.0. <https://doi.org/10.35878/santri.v3i2.521>
- Fuchs, C. (2010). Labor in Informational Capitalism and on the Internet. *Information Society*, 26(3), 179–196. <https://doi.org/10.1080/01972241003712215>
- Gunawan, O. A., Asyari, H., & Ratnaningsih, S. (2022). Manajemen Pesantrenan di Pondok Pesantren Al-Ashriyyah Nurul Iman Bogor. *Indonesian Journal*

- of Islamic Educational Management*, 5.0(1.0), 12.0-12.0.
<https://doi.org/10.24014/ijiem.v5i1.15538>
- Guntoro, Lisnawita, & Costaner, L. (2022). Pengembangan dan Pendampingan Web Profil Pondok Pesantren Ibnu Al-Mubarak Pekanbaru. *Dinamisia : Jurnal Pengabdian Kepada Masyarakat*, 6.0(6.0), 1517.0-1525.0.
<https://doi.org/10.31849/dinamisia.v6i6.12020>
- Halim, A., Suharto, B., & Safe'i, I. (2026). Digitalisasi Pesantren dan Perubahan Otoritas Keilmuan. *CENDEKIA: Jurnal Studi Keislaman*, 12(1), 45–55.
<https://doi.org/10.37348/cendekia.v12i1.941>
- Hamzah, Muh., Febrianto, A., Yakin, A., Nurbayah, S., & Riyantoro, S. F. (2022). Penguatan Ekonomi Pesantren Melalui Digitalisasi Unit Usaha Pesantren. *Jurnal Ilmiah Ekonomi Islam*, 8.0(1.0), 1040.0-1040.0.
<https://doi.org/10.29040/jiei.v8i1.4730>
- Harahap, E., Sulaeman, S., & Sa'diyah, R. (2022). The Development of Pesantren Tahfidz Model to Support Indonesia Gold in 2045. *Saudi Journal of Humanities and Social Sciences*, 7.0(5.0), 231.0-239.0.
<https://doi.org/10.36348/sjhss.2022.v07i05.007>
- Hasanah, N. S. A., & Fanani, M. Z. (2022). Pengembangan Keterampilan Santri melalui Pelatihan Desain Grafis di Syarif Hidayatullah Cyber Pesantren. *Jumat Informatika: Jurnal Pengabdian Masyarakat*, 2.0(3.0), 152.0-155.0.
https://doi.org/10.32764/abdimas_if.v2i3.1963
- Hidayat, S., Sofian, O., Kusuma, J. W., & Suhendar, S. (2022). PKMS Kelompok Santripreneur Pondok Pesantren Al-Mubarak Kota Serang Provinsi Banten. *International Journal of Community Service Learning*, 6(3), 344–350.
<https://doi.org/10.23887/ijcsl.v6i3.51917>
- Hikmah, N., Sarjana, K., Triutami, T. W., & Lu'luilmaknun, U. (2023). Pelatihan pembuatan perangkat pembelajaran berbasis TPACK bagi guru Madrasah Al Aziziyah Gunungsari. *Rengganis Jurnal Pengabdian Masyarakat*, 3.0(2.0), 239.0-246.0. <https://doi.org/10.29303/rengganis.v3i2.368>
- Hjarvard, S. (2011). The Mediatisation of Religion: Theorising Religion, Media and Social Change. *Culture and Religion*, 12(2), 119–135. Scopus.
<https://doi.org/10.1080/14755610.2011.579719>
- Hjarvard, S. (2012). Three Forms of Mediatized Religion: Changing the Public Face of Religion. *State Religion and Church in Russia and Worldwide*, 38(2), 41–75. <https://doi.org/10.22394/2073-7203-2020-38-2-41-75>
- Hoover, S. M. (2006). Religion in the media age. In *Relig. In the Media Age* (p. 341). Routledge Taylor & Francis Group. Scopus.
<https://doi.org/10.4324/9780203503201>

- Husen, K., & Husni, M. (2025). Peran Pesantren Dalam Meneguhkan Identitas Budaya Indonesia di Tengah Arus Modernisasi. *IHSAN: Jurnal Pendidikan* ..., (Query date: 2026-05-09 18:59:04). <http://ejournal.yayasanpendidikandzurriyatulquran.id/index.php/ihsan/article/view/847>
- Ilhamuddin, M. F., Rifqi, A. R., Setianingrum, V. M., & Najlah, N. N. (2022). Pelatihan Pengelolaan Media Sosial Sebagai Media Humas Pondok Pesantren Al-Falah Ploso Mojo Kediri. *Transformasi Dan Inovasi: Jurnal Pengabdian Masyarakat*, 1.0(2.0), 89.0-93.0. <https://doi.org/10.26740/jpm.v1n2.p89-93>
- Ilyas, R., Hartono, R., & Aswin, A. (2022). PKM Society Empowering dalam Upaya Peningkatan Digitalisasi Keuangan Syariah bagi Pondok Pesantren. *Jurnal Pengabdian UNDIKMA*, 3.0(3.0), 499.0-499.0. <https://doi.org/10.33394/jpu.v3i3.6042>
- Irawan, D., & Fauzi, F. (2025). Pondok Pesantren dan Tantangan Memerangi Radikalisme. *HOLD*, 2(01), 1–11.
- Izza, N. R. A. (2026). Integrasi E-learning dalam Pendidikan Pesantren: Analisis Ngaji Kilatan Perspektif Al-Qur'an Hadis. *Mujalasat: Multidisciplinary Journal of Islamic Studies*, 4(1), 97–110. <https://doi.org/10.33367/mujalasat.v4i1.8891>
- Ja'far, A. (2019). Literasi Digital Pesantren: Perubahan dan Kontestasi. *Islamic Review: Jurnal Riset Dan Kajian Keislaman*, 8(1), 17–35. <https://doi.org/10.35878/islamicreview.v8i1.156>
- Jannah, N., & Wantini, W. (2022). Modernisasi Pendidikan Pesantren (studi Kasus Pondok Pesantren Modern Al-Huda Turalak Ciamis). *PARAMUROBI: JURNAL PENDIDIKAN AGAMA ISLAM*, 5.0(1.0), 77.0-88.0. <https://doi.org/10.32699/paramurobi.v5i1.2367>
- Khakim, L. (2020). Tradisi Riyadhah Pesantren. *Al-Isnad: Journal of Islamic Civilization History and Humanities*, 1(1), 42–62. <https://doi.org/10.22515/isnad.v1i1.3241>
- Khoeron, K., Maftuhah, M., Tobroni, T., & Faridi, F. (2025). Tranformasi Kelembagaan Pesantren Tremas Adaptasi dan Inovasi di Era Digital. *PROGRESSA: Journal of Islamic Religious Instruction*, 9(1), 63–76. <https://doi.org/10.32616/pgr.v9.1.501.63-76>
- Kholifah, A. (2022). Strategi Pendidikan Pesantren Menjawab Tantangan Sosial di Era Digital. *Jurnal Basicedu*, 6.0(3.0), 4967.0-4978.0. <https://doi.org/10.31004/basicedu.v6i3.2811>

- Kholifah, S. (2022). The Dynamics of the Pesantren Adaptation Patterns Amid the Covid-19 Pandemic. *Religious: Jurnal Studi Agama-Agama Dan Lintas Budaya*, 6.0(1.0), 25.0-38.0. <https://doi.org/10.15575/rjsalb.v6i1.15113>
- Latar, B., Syarifudin, E., & Shobri, S. (2022). Management of ICT and Telegram Bot: Implementation of Information Services for Daar El Hasanah Students. *IJGIE (International Journal of Graduate of Islamic Education)*, 3.0(1.0), 52.0-67.0. <https://doi.org/10.37567/ijgie.v3i1.1016>
- Lisnasari, S. F., Widiyarti, G., Jainab, J., Rezeki, U. S., & Suciawati, H. (2023). Rethinking Technology-Based Islamic Boarding School Education Management. *Tafkir: Interdisciplinary Journal of Islamic Education*, 3.0(2.0), 228.0-244.0. <https://doi.org/10.31538/tijie.v3i2.239>
- Lutfia, A. (2024). *Implementasi Pemberdayaan Ekonomi Pesantren dalam Menciptakan Kemandirian Pesantren di Era Ekonomi Digital Perspektif Ekonomi Islam (studi Pada Yayasan Pondok Pesantren Al-Hidayat Gerning Kecamatan Tegineneng Kabupaten Pesawaran)* [Diploma, UIN RADEN INTAN LAMPUNG]. https://repository.radenintan.ac.id/33065/?_cf_chl_f_tk=0tYAUiaHBnie3QLs5RKLIjyhhtMHbn0fInpx0CGvhxs-1783061578-1.0.1.1-yM9nX8BZDs49uDrFRYK9fPImk1HZ0kic5VZSnWNltp0
- Mahfudloh, R. I. (2023). Peran Sanad Keilmuan Dalam Pengembangan Pondok Pesantren. *Qomaruna: Journal of Multidisciplinary Studies*, 1(1), 23–30. <https://doi.org/10.62048/qjms.v1i1.24>
- Maimun, M. H., Kussudyarsana, Maulana, null H. K., Rahman, A. A., & Utomo, I. C. (2022). Pemanfaatan Digital Marketing Pada Pondok Pesantren Tahfidz Al-Qur'an Ath-Thohiriyah Muhammadiyah. *Abdi Psikonomi*, 63.0-69.0. <https://doi.org/10.23917/psikonomi.v3i1.738>
- Maisaroh, Muzakir, M. F. A., & Tatik, T. (2022). Pelatihan E-Commerce Untuk Mendorong Terwujudnya Wirausaha Santri Pada Yayasan ASWAJA Nusantara, Sleman, Yogyakarta. *Jurnal Abdimas Madani Dan Lestari (JAMALI)*, 4.0(1.0), 17.0-24.0. <https://doi.org/10.20885/jamali.vol4.iss1.art3>
- Maria, A. D., Haddar, G. A., & Arwen, D. (2025). Tantangan dan Peluang Implementasi E-Learning dalam Pendidikan Islam di Indonesia. *Sanskara Pendidikan Dan Pengajaran*, 3(02), 92–99. <https://doi.org/10.58812/spp.v3i02.560>
- Maslahah, W. (2022). Pola Kepemimpinan Di Pondok Pesantren Dalam Prespektif Milenial. *Social, Humanities, and Educational Studies (SHEs): Conference Series*, 5.0(1.0), 285.0-285.0. <https://doi.org/10.20961/shes.v5i1.57810>

- Meyer, J. W., & Rowan, B. (1977). Institutionalized Organizations: Formal Structure as Myth and Ceremony. *American Journal of Sociology*, 83(2). <https://doi.org/10.2307/2778293>
- Midroro, J. N., Prastowo, S. H. B., & Nuraini, L. (2022). The Development of an Integrated Interactive Digital Physics Module for the Larung Sesaji Culture of the Coastal Community of Jember Regency. *Journal of Natural Science and Integration*, 5.0(1.0), 136.0-136.0. <https://doi.org/10.24014/jnsi.v5i1.12640>
- Mufron, A. (2020). Transformasi Pondok Pesantren (Upaya Merawat Tradisi dan Modernisasi Sistem Pesantren di Era Disrupsi). *Tarbawi Ngabar: Jurnal of Education*, 1(2), 191–208. <https://doi.org/10.55380/tarbawi.v1i02.55>
- Mursyidi, M. (2023). Pembaharuan Sistem Pendidikan Pesantren Tradisional di Aceh (Studi Penelitian Pesantren Mudi Mesra Samalanga Kabupaten Bireuen—Aceh). *ISLAMIC PEDAGOGY: Journal of Islamic Education*, 1(1), 64–84. <https://doi.org/10.52029/ipjie.v1i1.141>
- Nilasari, Y., & Pangestuti, D. D. (2022). Akuntansi Pesantren Berbasis Kewirausahaan Berdasarkan SAK ETAP Dengan Aplikasi Myob. *Owner: Riset & Jurnal Akuntansi*, 7.0(1.0), 458.0-469.0. <https://doi.org/10.33395/owner.v7i1.1299>
- Ni'mah, N., Fitri, A. N., & Fitri, F. (2022). Tingkat pengetahuan literasi media pada mahasiswa di Pondok Pesantren Fadhlul Fadhlun Semarang. *Islamic Communication Journal*, 7(1), 19–34. <https://doi.org/10.21580/icj.2022.7.1.9734>
- Nisa', V. N., & Lestari, Z. T. (2023). Kurikulum Pendidikan Pondok Pesantren Mambaus Sholihin pada Kebijakan Pemerintah di Era Society 5.0. *Journal on Education*, 5(2), 1702–1707. <https://doi.org/10.31004/joe.v5i2.808>
- Nurrohman, W., & Prastowo, A. (2022). Evaluasi Program Pembelajaran Tahfidz Quran di Masa Pembelajaran Pandemi Covid-19. *Jurnal PAI Raden Fatah*, 4.0(1.0), 60.0-69.0. <https://doi.org/10.19109/pairf.v4i1.9063>
- Pratama, M. R., & Syam, N. K. (2022). Efektivitas Penerimaan Santri Baru Melalui Sosial Media. *Jurnal Riset Komunikasi Penyiaran Islam*, 1.0(2.0), 128.0-132.0. <https://doi.org/10.29313/jrkpi.v1i2.575>
- Priyatna, S. E., Za, A. M., & Barni, M. (2024). Menyinerigikan Tradisi dan Teknologi: Optimalisasi Metode Sorogan dan Bandongan di Pesantren Salafiyah Melalui Media Pembelajaran Digital. *Bayan lin-Naas: Jurnal Dakwah Islam*, 8(2), 51–71. <https://doi.org/10.28944/bayanlin-naas.v8i2.1927>

- Rafiq, A. (2020). Dampak Media Sosial Terhadap Perubahan Sosial Suatu Masyarakat. *Global Komunika : Jurnal Ilmu Sosial Dan Ilmu Politik*, 3(1), 18–29. <https://doi.org/10.33822/gk.v3i1.1704>
- Rahman, S. A., & Husin, H. (2022). Strategi Pondok Pesantren dalam Menghadapi Era Society 5.0. *Jurnal Basicedu*, 6.0(2.0), 1829.0-1836.0. <https://doi.org/10.31004/basicedu.v6i2.2371>
- Rahmawati, U., & Nofiaturrahmah, F. (2022). Jumat Literacy: Information Literacy Assistance Students of Islamic Boarding of Tahfiz Misbahul Quran Mejobo Kudus. *Engagement: Jurnal Pengabdian Kepada Masyarakat*, 6.0(1.0), 252.0-269.0. <https://doi.org/10.29062/engagement.v6i1.399>
- Romadloni, F. (2024). Peran Pesantren sebagai Inkubator Ekosistem Bisnis Kreatif. *Journal Creative Economics and Trading Halal Ecosystem*, 2(01), 56–70. <https://doi.org/10.56404/cethe.v2i01.200>
- Rusmiaty, R., Aras, M., Nurfadhil, A., Arnadi, A., & Hadade, H. (2025). Kontribusi Pondok Pesantren dalam Pembentukan Masyarakat dan Penguatan Budaya Lokal. *Al-Irnyad: Journal of Education Science*, 4(2), 214–225. <https://doi.org/10.58917/aijes.v4i2.232>
- Sadali, S. (2020). Eksistensi Pesantren Sebagai Lembaga Pendidikan Islam. *Atta'dib Jurnal Pendidikan Agama Islam*, 1(2), 53–70. <https://doi.org/10.30863/attadib.v1i2.964>
- Saefudin, A., Triharwanto, F., Farida, Y. E., Mahalli, M., Rozaq, A., & Yulistianti, H. D. (2022). *The Socio-Cultural Resilience of Islamic Boarding School: Supporting and Inhibiting Factors*. <https://doi.org/10.2991/assehr.k.220104.031>
- Sa'id, M., Arsad, R. A. R. A., Umaroh, R. F., Noorrizki, R. D., & Mantara, A. Y. (2022). Information literacy training for teenager-students of Islamic boarding school on the digital era. *Abdimas: Jurnal Pengabdian Masyarakat Universitas Merdeka Malang*, 7(2), 329–343. <https://doi.org/10.26905/abdimas.v7i2.6507>
- Scott, W. R. (2014). *Institutions and Organizations: Ideas, Interests, and Identities*. SAGE Publications, Inc.
- Setiawan, N., & Khiyaroh, A. (2022). Urgensi Dan Strategi Dakwah Santri di Era Digitalisasi. *Jurnal Dakwah Dan Komunikasi*, 7.0(2.0), 223.0-223.0. <https://doi.org/10.29240/jdk.v7i2.5774>
- Setyaningsih, R., Abdullah, A., Prihantoro, E., & Hustinawaty, H. (2019). Kajian Difusi Inovasi E-Learning Di Lembaga Pendidikan Pesantren. *Prosiding Seminar Nasional Hasil Penelitian Dan Pengabdian Kepada Masyarakat UNIPMA*, 1(1), 207–212.

- Shidiq, Ah., & Mubin, Moh. U. (2022). Modernization of Boarding Boards through Digitalization of The Education System in Pensantren. *EDU-RELIGIA: Jurnal Keagamaan Dan Pembelajarannya*, 5.0(2.0), 52.0-65.0. <https://doi.org/10.52166/edu-religia.v5i2.3399>
- Sumarmi, S., Muchran, M., & Nugroho, G. S. (2022). Entrepreneurship Training and Digital Marketing to Seize Business Opportunities. *Abdimas Galuh*, 4.0(1.0), 330.0-330.0. <https://doi.org/10.25157/ag.v4i1.7136>
- Supandi, S., Subhan, M., & Hobir, A. (2024). Adaptasi e-Learning dalam Pendidikan Islam: Membangun Pendekatan Kolaboratif-Inklusif Untuk Kemajuan Lembaga Madrasah & Pesantren di Madura. *Kariman: Jurnal Pendidikan Keislaman*, 12(1), 120–138. <https://doi.org/10.52185/kariman.v12i1.410>
- Suryadinata, A. M. I., Pratama, M. W., & Firmansyah, E. (2025). Model Pembelajaran PAI Interdisipliner Berbasis Peace Education dan Deradikalisasi di Pondok Pesantren Modern Al-Istiqamah Ngatabaru. *Research and Development Journal of Education*, 11(2), 780–785. <https://doi.org/10.30998/rdje.v11i2.20991>
- Syafrin, S., & Muslimah, M. (2021). Problematika Pembelajaran E-learning dimasa Pandemi Covid-19 bagi Santri Pondok Pesantren Al-Hasyimiyyah Kotawaringin Barat. *Jurnal Al-Qiyam*, 2(1), 10–15. <https://doi.org/10.33648/alqiyam.v2i1.108>
- Syamsu, N., Sofyan, S., Aisyah, S., & MD, M. (2022). Integration of Using Fintech and Social Media for The Business Sustainability in Pesantren. *EKONOMIKA SYARLAH: Journal of Economic Studies*, 6.0(2.0), 167.0-167.0. <https://doi.org/10.30983/es.v6i2.6024>
- Taufikin, T. (2022). Pesantren: Pendidikan Khas Indonesia, Tangguh di Masa Pandemi Covid-19. *Tarbawiyah: Jurnal Ilmiah Pendidikan*, 5.0(2.0), 151.0-170.0. <https://doi.org/10.32332/tarbawiyah.v5i2.4285>
- Thompson, J. D. (1967). *Organizations in Action: Social Science Bases of Administrative Theory*. Routledge.
- Vishkurti, R. (2022). Islamic Boarding Schools: Among Da'wah, Education, and Moderation Way in Islam. *Dakwatuna: Jurnal Dakwah Dan Komunikasi Islam*, 8.0(2.0), 168.0-168.0. <https://doi.org/10.54471/dakwatuna.v8i2.1737>
- Wahidah, E. Y. (2015). Studi implementasi tradisionalisasi dan modernisasi pendidikan di pondok pesantren. *Jurnal Muaddib*, (Query date: 2026-05-09 18:59:04). <https://eprints.umpo.ac.id/1862>

- Wati, R., Ardini, L., & Fidiana, F. (2022). The Implementation of Spiritual and Financial Accountability in Islamic Boarding School. *Al-Uqud: Journal of Islamic Economics*, 6.0(1.0), 101.0-114.0. <https://doi.org/10.26740/aluqud.v6n1.p101-114>
- Yusuf, F. A. (2022). An Investigation on the Learning Barriers of Boarding School Students in terms of Different Dimensions of the Curriculum Implementation. *Pegem Egitim ve Ogretim Dergisi*, 13(1), 301–308. <https://doi.org/10.47750/pegegog.13.01.33>
- Yusuf, M. A. (2022). Integrasi, Komunikasi Komunitas Santri Batang dalam Pencegahan Intoleransi Beragama. *Jurnal Indonesia Sosial Sains*, 3.0(8.0), 1149.0-1158.0. <https://doi.org/10.36418/jiss.v3i8.632>
- Zafi, A. A., Rohmania, K., Layinatusyifa, L., Firdaus, F. A., & Renaldi, M. Y. (2023). Marketing Strategy for Bali Islamic Boarding School Education Bina Insani in the Midst of Non-Muslim Communities. *Idaarah: Jurnal Manajemen Pendidikan*, 7.0(1.0), 73.0-85.0. <https://doi.org/10.24252/idaarah.v7i1.31911>

