

DEVELOPMENT OF A PARTICIPATORY SMART MADRASAH LEADERSHIP MODEL BASED ON SOCIO-CULTURAL VALUES IN THE SOCIETY 5.0 ERA

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Abstrak. This study aims to develop a participatory Smart Madrasah leadership model grounded in the social culture of the community in the Society 5.0 era at MA Darul Huda Gumukmas Jember. The research is driven by the growing demand for digital transformation in Islamic education, which requires leadership that not only adopts digital technology but also integrates local socio-cultural values and promotes stakeholder participation in educational governance. A qualitative field research approach was employed to explore leadership practices, social interactions, and the implementation of Smart Madrasah within a religious community context. Data were collected through participant observation, in-depth interviews, and documentation, and analyzed using the interactive model of Miles, Huberman, and Saldaña, including data condensation, data display, and conclusion drawing. The findings reveal that Smart Madrasah development is supported by participatory leadership involving teachers, students, parents, alumni, religious leaders, and the wider community in collaborative decision-making. Values of mutual cooperation, deliberation, social solidarity, and Islamic ethics provide the cultural foundation for sustainable digital transformation. Furthermore, technology integration is implemented through strengthening digital literacy, fostering dialogic communication, and reinforcing Islamic character education. This study contributes to Islamic educational leadership theory by proposing a culturally responsive participatory leadership model that supports sustainable Smart Madrasah development in the Society 5.0 era.

Kata Kunci: Participatory leadership¹; Smart Madrasah²; Society 5.0³; Social culture⁴; Digital transformation⁵

I. INTRODUCTION

Background of the Study

The rapid advancement of digital technology in the Society 5.0 era has fundamentally transformed educational systems worldwide. Introduced by Japan, the Society 5.0 concept envisions a human-centered society in which digital technologies, artificial intelligence, big data, and the Internet of Things (IoT) are integrated to improve various aspects of human life, including education. This transformation requires educational institutions to establish adaptive, collaborative, and technology-oriented management systems capable of addressing the increasingly complex demands of modern society. Consequently, educational leadership has shifted from traditional bureaucratic administration toward participatory, innovative, and socially responsive leadership that accommodates the cultural characteristics of local communities (Rahmawati & Suyatno, 2022).

In Indonesia, digital transformation in education has been accelerated through the *Merdeka Belajar* policy, the digitalization of madrasahs, and the integration of character education with digital innovation. The Ministry of Religious Affairs has actively promoted the Smart Madrasah initiative as a strategic effort to improve the quality of Islamic education through information technology integration, participatory governance, and institutional capacity building. Nevertheless, implementing this initiative remains challenging, particularly because many educational leaders have not fully succeeded in integrating technological innovation with the socio-cultural values of local communities (Nugraha et al., 2023).

Previous studies indicate that many Islamic educational institutions continue to adopt centralized and administrative leadership styles, limiting meaningful participation from teachers, students, parents, and community members. Hidayat and Kurniawan (2021) found that weak collaboration between madrasah leaders and local communities significantly reduces the effectiveness of digital innovation in religious schools. These findings suggest

that the successful implementation of Smart Madrasah depends not only on technological infrastructure but also on leadership models capable of fostering collective participation and social engagement.

This issue is particularly significant within the Indonesian context, where communities are characterized by strong communal and religious values. In madrasahs, local social culture strongly influences communication patterns, decision-making processes, and educational policy implementation. Participatory leadership therefore becomes essential because it encourages dialogue and collaboration among principals, teachers, students, school committees, religious leaders, parents, and surrounding communities in institutional development (Sulaiman et al., 2024).

Although participatory leadership has been widely discussed in educational research, most previous studies have focused on general schools rather than Islamic educational institutions embedded within local socio-cultural environments. Wahyuni et al. (2022) demonstrated that participatory leadership improves organizational performance through collective stakeholder involvement. However, their study primarily emphasized organizational management and did not examine the relationship between local social culture and digital transformation within the Society 5.0 framework.

Similarly, studies on Smart Madrasah have mainly concentrated on digital learning technologies and administrative information systems while paying limited attention to the social processes underlying digital transformation. Fauzi and Arifin (2023) reported that Smart Madrasah implementation continues to face organizational cultural barriers, resistance to technological change, and limited community participation. These findings indicate the need to investigate how participatory leadership can function as a bridge between technological innovation and the socio-cultural values of local communities.

From the perspective of educational leadership theory, participatory leadership emphasizes stakeholder involvement as a fundamental component of organizational decision-making. This approach highlights collaboration, open communication, shared responsibility, and organizational commitment among all educational stakeholders (Bush, 2020). In the Society 5.0 era, such leadership becomes increasingly relevant because educational transformation requires collective adaptation rather than individual decision-making.

Furthermore, the Smart Madrasah concept aligns with the theory of digital transformation in education, which stresses the simultaneous integration of technology, organizational culture, and educational innovation. Fitriyah et al. (2021) argued that successful digital transformation is strongly influenced by leadership capable of integrating local cultural values with technological advancement. Consequently, Smart Madrasah development requires a contextual leadership model that responds effectively to the realities of local communities while embracing technological innovation.

MA Darul Huda Gumukmas Jember provides an appropriate context for investigating this issue because it combines strong religious and communal traditions with an ongoing commitment to digital educational development. Situated within a highly religious community, the madrasah continues to preserve values such as mutual cooperation (*gotong royong*), pesantren traditions, and active community participation while implementing Smart Madrasah programs. The principal actively involves teachers, parents, alumni, religious leaders, and community representatives in planning and implementing institutional development.

This situation illustrates a unique interaction between local socio-cultural traditions and digital educational transformation. On one hand, educational modernization requires the adoption of digital technologies and innovative management systems. On the other hand, the madrasah must preserve its religious and cultural identity to maintain social legitimacy within the community. These dynamics make MA Darul Huda an important setting for examining participatory leadership through a qualitative research approach.

A qualitative approach is particularly appropriate because it enables researchers to explore meanings, experiences, leadership practices, and social interactions within their natural context. It facilitates a deeper understanding of how madrasah leaders encourage community participation, manage digital transformation, and negotiate local cultural values throughout the leadership process (Creswell & Poth, 2021).

Despite growing attention to Islamic educational leadership and digital transformation, a significant research gap remains regarding the integration of participatory leadership, local socio-cultural values, and Smart Madrasah development in the Society 5.0 era. Previous studies have generally examined technological innovation,

organizational effectiveness, or principal competencies separately. Comprehensive investigations connecting these three dimensions remain limited, particularly within rural Islamic senior secondary schools.

Addressing this gap, the present study aims to analyze the development of a participatory Smart Madrasah leadership model based on community social culture in the Society 5.0 era at MA Darul Huda Gumukmas Jember. Specifically, the study explores the principal's leadership practices, community participation, the integration of local socio-cultural values into educational governance, and digital transformation strategies employed in Smart Madrasah development.

Theoretically, this study is expected to enrich the literature on Islamic educational leadership by proposing a contextual participatory leadership model grounded in community social culture within the digital era. Practically, the findings are expected to provide valuable insights for madrasah leaders, educational policymakers, and community stakeholders in developing Smart Madrasah systems that are participatory, culturally responsive, human-centered, and capable of addressing the challenges of Society 5.0.

Problem of the Study

The rapid advancement of the Society 5.0 era has created new challenges for Islamic educational institutions, particularly madrasahs, in adapting to digital transformation while preserving their religious identity and socio-cultural values. Although many madrasahs have begun implementing digital technologies, the transformation often emphasizes technological infrastructure rather than leadership practices that encourage stakeholder participation and cultural integration. Consequently, digital initiatives tend to be fragmented, less sustainable, and insufficiently responsive to the needs of the local community.

At MA Darul Huda Gumukmas Jember, the implementation of the Smart Madrasah concept requires a leadership model capable of integrating digital innovation with the social and cultural values of the surrounding community. Existing leadership approaches have not fully optimized the participation of teachers, educational staff, students, parents, school committees, alumni, religious leaders, and community members in planning, implementing, evaluating, and improving educational programs. As a result, opportunities to strengthen collaborative governance, community ownership, and sustainable institutional development remain underutilized.

Furthermore, there is still limited empirical research that explains how participatory leadership grounded in local socio-cultural values can effectively support Smart Madrasah development in the context of Society 5.0. Most previous studies focus either on digital transformation or educational leadership separately, without providing an integrated framework that combines technological innovation, participatory governance, and Islamic social values.

Therefore, this study addresses the need to develop a participatory Smart Madrasah leadership model based on the social culture of the community at MA Darul Huda Gumukmas Jember. Specifically, the study seeks to examine how participatory leadership practices, supported by local cultural values and digital innovation, can promote effective governance, strengthen stakeholder collaboration, and ensure the sustainable development of Smart Madrasahs in the Society 5.0 era.

Research's State of the Art

Educational leadership in the context of madrasahs has undergone significant transformation in the era of Society 5.0. Madrasah principals are no longer expected merely to perform administrative functions; they must also serve as drivers of innovation, facilitators of collaboration, and guardians of the institution's social and religious values. Society 5.0 demands an educational system that integrates digital technology with human needs. Consequently, madrasahs are required to develop governance systems that are intelligent, adaptive, and firmly rooted in community values. In the context of this study, **participatory Smart Madrasah leadership** is defined as the ability of the madrasah principal to actively involve teachers, educational staff, students, parents, school committees, alumni, religious leaders, and the wider community in the planning, implementation, evaluation, and development of digitally based madrasahs that are grounded in local socio-cultural values (Rahman & Aslan, 2025).

Theoretically, participatory leadership is based on the premise that educational decisions become more effective when they involve stakeholders who are directly affected by institutional policies. This concept emphasizes deliberation, open communication, collective participation, shared responsibility, and the cultivation of a strong sense of ownership toward the institution. Within the madrasah context, participatory leadership extends beyond

providing teachers with opportunities to voice their opinions; it also involves fostering meaningful social relationships with the surrounding community. Its operational indicators include stakeholder involvement in decision-making, program transparency, two-way communication, teamwork, collaboration with the school committee, and the principal's openness to criticism and innovation (Mubarok et al., 2024).

The **Smart Madrasah** concept refers to a model of madrasah development that integrates digital technology, data-driven management, efficient educational services, innovative learning practices, and a culture of institutional quality. In practice, a Smart Madrasah is not assessed solely by the availability of applications, internet connectivity, or digital devices. Rather, it also encompasses intelligent governance, social intelligence, spiritual intelligence, and cultural intelligence. Therefore, the indicators of a Smart Madrasah include the digitalization of administrative processes, the integration of technology into teaching and learning, the enhancement of teachers' digital literacy, transparency of information, the strengthening of students' character development, and active community participation in the advancement of the madrasah (Prasetya, 2025).

The social culture of the community constitutes a crucial element in madrasah development, particularly in regions with strong religious and communal ties such as Gumukmas, Jember. A madrasah does not exist as an institution separate from the community; rather, it grows through social support, religious values, traditions of mutual cooperation (*gotong royong*), trust in religious leaders, and the emotional bond between the school and the surrounding community. In this context, the community's social culture can be operationalized through the values of deliberation (*musyawarah*), mutual cooperation, social solidarity, respect for Islamic scholars (*ulama*), parental participation, alumni support, and community involvement in the religious and educational activities of the madrasah (Sunhaji & Purnomo, 2020).

Participatory leadership theory is highly relevant to this study because it explains how madrasah principals foster collective engagement in responding to digital transformation. However, this theory should be interpreted contextually. Within the madrasah setting, participation is not always manifested through formal mechanisms such as meetings, school committee forums, or policy documents. It also takes the form of moral support, social donations, the involvement of religious leaders, community trust, and informal collaboration. Therefore, this study conceptualizes participatory leadership as a social process embedded within the community's culture rather than merely as a managerial technique (Djoyo, 2024).

The theory of digital transformation in education also serves as a fundamental framework for this study. Digital transformation involves not only changes in technological tools but also shifts in mindset, organizational culture, service delivery, and instructional strategies. In the madrasah context, digital transformation must be implemented in harmony with Islamic values, students' character development, and the social conditions of the community. Studies on madrasah management transformation indicate that digitalization can be successfully achieved only when supported by visionary leadership, teachers who are prepared to embrace change, adequate technological infrastructure, and an organizational culture that is open to innovation (Maskin, 2025).

The Society 5.0 era reinforces the need for a human-centered leadership model. Technology should not replace social relationships and human values in education. Madrasah principals are expected to utilize technology to expand educational services, improve the quality of learning, strengthen communication with the community, and facilitate decision-making processes. However, technology must remain oriented toward developing students who are religious, critical thinkers, creative, collaborative, and socially responsible. Accordingly, a **Smart Madrasah** grounded in the community's social culture positions technology as a means, while human beings, values, and culture remain the central focus of madrasah development (Wahyudin, 2023).

Previous studies have demonstrated that participatory leadership makes a positive contribution to improving the quality of madrasahs. Mubarok et al. (2024) found that madrasah principals who actively involve teachers, staff, students, parents, and the community are able to create a more inclusive environment and enhance stakeholders' commitment to the institution. Djoyo (2024) reported that democratic and transparent principals who maintain active communication with school committees are more successful in strengthening the quality of Islamic education. Susrianto et al. (2024) further emphasized that the leadership of madrasah principals plays a significant role in fostering students' religious values. Although these three studies are relevant, none specifically examines participatory leadership within the framework of a Smart Madrasah based on the social culture of the community.

Studies on the digitalization of madrasahs have expanded considerably over the past five years. Prasetya (2025) examined the strengthening of Islamic education management through madrasah digitalization in the Society 5.0 era. Yahya (2025) emphasized that digital transformation in Islamic educational management should be directed toward enhancing efficiency, transparency, and institutional adaptability. Maskin (2025) discussed strategies employed by madrasah principals to manage digital transformation in order to improve technology-based learning quality. Mukarromah (2025) highlighted the digitalization of Islamic Religious Education as a sustainable pedagogical strategy. Although these four studies provide valuable insights, they primarily focus on digital and managerial aspects, without thoroughly exploring the relationship between digitalization, participatory leadership, and the community's social culture.

Research on Society 5.0 in the context of Islamic education also provides an important conceptual foundation for this study. Rahman and Aslan (2025) explained the significance of innovative leadership strategies utilizing artificial intelligence (AI), digital platforms, and virtual reality in Islamic educational management. Sari (2025) investigated the challenges and strategies faced by madrasah principals in the Society 5.0 era, particularly regarding human resource readiness and digital governance. Wika (2024) argued that madrasah leadership in the Society 5.0 era faces challenges related to technological adaptation, changing organizational culture, and the reinforcement of Islamic values. While these three studies are relevant, they do not specifically address the development of a participatory leadership model rooted in the local community's social culture.

Studies on community participation in Islamic education further support the rationale for this research. Sunhaji and Purnomo (2020) demonstrated that community participation plays a vital role in planning the financing of Islamic education. Munir (2021) emphasized that the development of Islamic educational institutions requires active community involvement as a strategic partner. Bakhtimi (2025) proposed a community-based Islamic education model that positions community members as active subjects of education rather than merely external supporters. Sulaiman (2025) highlighted the importance of cultural resilience, as well as the roles of Islamic scholars (*ulama*) and local leaders, in maintaining the relevance of Islamic education. Collectively, these studies reinforce the assumption that the development of a **Smart Madrasah** cannot rely solely on technological approaches but must also be grounded in the social trust and cultural values of the community.

Based on a comparison of ten previous studies—namely Mubarak et al. (2024), Djoyo (2024), Susrianto et al. (2024), Prasetya (2025), Yahya (2025), Maskin (2025), Rahman and Aslan (2025), Sari (2025), Sunhaji and Purnomo (2020), and Bakhtimi (2025)—it is evident that existing research has generally followed three major directions. The first focuses on madrasah leadership and educational quality improvement. The second examines madrasah digitalization and the implementation of Society 5.0. The third explores community participation in Islamic education. The present study differs from these previous works by integrating these three perspectives into a single research focus: the development of a participatory **Smart Madrasah** leadership model based on the community's social culture at MA Darul Huda Gumukmas, Jember.

Accordingly, the **theoretical gap** addressed by this study lies in the absence of a robust conceptual model that explains the relationship among participatory leadership, the Smart Madrasah concept, and the community's social culture within the context of Society 5.0. The **empirical gap** stems from the limited number of qualitative studies that explore the experiences of madrasah principals, teachers, school committees, community leaders, parents, and students in developing a Smart Madrasah grounded in local cultural values. To address these gaps, this study employs a conceptual framework synthesized from participatory leadership theory, the theory of digital transformation in education, community-based Islamic education theory, and the Society 5.0 concept. These four theoretical foundations are used to analyze leadership practices of madrasah principals, forms of community participation, digital transformation strategies, and the construction of a Smart Madrasah model that is human-centered, religiously grounded, participatory, and responsive to its local context.

Gap Study and Objective

Gap Study

Previous studies have generally focused on three separate areas: **(1)** participatory leadership and the improvement of madrasah quality, **(2)** digital transformation and Smart Madrasah development in the Society 5.0 era, and **(3)** community participation in Islamic education. While these studies have provided valuable insights, they

have not comprehensively integrated participatory leadership, digital transformation, and the community's socio-cultural values into a unified conceptual framework. Furthermore, empirical evidence remains limited regarding how madrasah principals mobilize teachers, students, parents, school committees, alumni, religious leaders, and local communities to collaboratively develop a Smart Madrasah rooted in local culture. Therefore, there is a need for a culturally responsive participatory leadership model that aligns technological innovation with Islamic values and community-based governance in the Society 5.0 era.

Objective of the Study

This study aims to develop a **participatory Smart Madrasah leadership model** grounded in the social culture of the community in the Society 5.0 era at MA Darul Huda Gumukmas Jember. Specifically, the study seeks to:

1. Examine the implementation of participatory leadership by the madrasah principal in managing Smart Madrasah development.
2. Explore the role of the community's socio-cultural values in supporting participatory leadership and digital transformation.
3. Analyze the integration of digital technology, stakeholder participation, and Islamic values in Smart Madrasah governance.
4. Formulate a culturally responsive participatory leadership model that supports sustainable Smart Madrasah development in the Society 5.0 era.

II. METHOD

Type and Design

This study employed a **qualitative approach** using a **field research** design. The qualitative approach was selected because the study seeks to gain an in-depth understanding of the processes, experiences, social interactions, and meanings constructed by the madrasah principal, teachers, students, and the community in developing a participatory **Smart Madrasah** leadership model based on the community's social culture in the Society 5.0 era. Field research was chosen because the phenomenon under investigation requires direct observation of the madrasah's natural setting, enabling the researcher to obtain contextual, rich, and holistic data. This approach allows for a more flexible and interpretive understanding of social reality than quantitative approaches, which primarily emphasize statistical measurement (Nurrisa, 2025; Hayati, 2025).

The study was conducted at **MA Darul Huda Gumukmas, Jember**, as the madrasah possesses characteristics that align with the research focus, namely the development of digitally based educational governance while preserving the social culture of a religious community. Research participants were selected using **purposive sampling**, based on their involvement in the development of the Smart Madrasah initiative. The participants included the madrasah principal, vice principals, teachers, educational staff, students, school committee members, parents, religious leaders, and community members who were considered knowledgeable about the dynamics of participatory leadership within the institution. Participant selection was carried out progressively until **data saturation** was achieved, indicating that the information collected was sufficient to comprehensively explain the research focus (Djollong, 2026).

Data were collected through **participant observation**, **in-depth interviews**, and **document analysis** as a form of data triangulation. Participant observation focused on the leadership practices of the madrasah principal, decision-making processes, social interactions among members of the madrasah community, the use of digital technologies, and community involvement in educational programs. Semi-structured in-depth interviews were conducted to obtain flexible and comprehensive insights into participants' experiences, perspectives, and leadership strategies related to participatory Smart Madrasah development. In addition, documentation was used to strengthen the field data by analyzing institutional documents, including work plans, policy archives, organizational structures, photographs of activities, meeting minutes, and digital documents related to the implementation of the Smart Madrasah program. Data triangulation was employed to enhance the credibility, validity, and depth of the qualitative findings (Sugiyono, 2021; Jailani, 2023).

Data were analyzed using the **interactive model of Miles, Huberman, and Saldaña**, which consists of **data condensation, data display, and conclusion drawing**. During the data condensation stage, the researcher selected, coded, categorized, and simplified the field data in accordance with the research objectives. The data display stage involved organizing the findings into descriptive narratives, thematic matrices, and interpretations of the relationships among the observed phenomena. Finally, conclusions were drawn through a gradual process of identifying patterns, relationships, and meanings emerging from the data. Data analysis was conducted continuously throughout the research process, from the initial stage of data collection to the completion of the study, ensuring that the interpretations were firmly grounded in the empirical realities of the field (Muhaemin, 2026).

The trustworthiness of the findings was established through the criteria of **credibility, transferability, dependability, and confirmability**. Credibility was enhanced through source triangulation, methodological triangulation, member checking, and prolonged engagement in the research setting. Transferability was addressed by providing detailed descriptions of the research context and procedures, enabling readers to assess the applicability of the findings to similar settings. Dependability was ensured through a systematic audit of the research process, while confirmability was maintained by ensuring that all interpretations and conclusions were supported by empirical evidence obtained during the study. The research also adhered to ethical principles by protecting the confidentiality of participants' identities, obtaining permission from the madrasah before conducting the study, and maintaining objectivity throughout the data collection and analysis processes (Nugroho, 2024).

Data and Data Sources

The primary data for this study were obtained directly from fieldwork conducted at **MA Darul Huda Gumukmas, Jember**, where the implementation of participatory Smart Madrasah leadership was investigated within the context of the Society 5.0 era. Primary data consisted of the experiences, perceptions, and leadership practices shared by key stakeholders involved in the development of the Smart Madrasah program. These stakeholders included the madrasah principal, vice principals, teachers, educational staff, students, school committee members, parents, alumni, religious leaders, and community members. They were selected through **purposive sampling** based on their active involvement and knowledge of the leadership process, digital transformation initiatives, and community participation in madrasah governance. Data collection continued until **data saturation** was achieved, ensuring that sufficient information had been gathered to comprehensively address the research objectives.

Secondary data were collected from various institutional documents and supporting materials related to the implementation of the Smart Madrasah program. These included the madrasah's strategic plans, annual work programs, organizational structure, policy documents, meeting minutes, digital administration records, activity reports, photographs, and other archival materials. In addition, relevant books, journal articles, government regulations, and previous studies on participatory leadership, Smart Madrasah, digital transformation, Society 5.0, and community-based Islamic education were used to strengthen the theoretical and contextual foundation of the study.

The data were gathered through three complementary techniques: **participant observation, semi-structured in-depth interviews**, and **document analysis**. Participant observation enabled the researcher to directly examine leadership practices, stakeholder interactions, decision-making processes, the use of digital technology, and community involvement in educational activities. In-depth interviews provided detailed insights into participants' experiences, perspectives, and strategies regarding participatory leadership and Smart Madrasah development. Document analysis was conducted to verify and enrich the field findings through institutional records and digital documentation.

The integration of multiple data sources and collection techniques constituted a **triangulation strategy**, enhancing the credibility, trustworthiness, and comprehensiveness of the research findings. Together, these data sources provided a holistic understanding of how participatory leadership, digital transformation, and the community's socio-cultural values interact in developing a sustainable and culturally responsive Smart Madrasah model in the Society 5.0 era.

Data Collection Technique

Data were collected using three complementary qualitative techniques: participant observation, semi-structured in-depth interviews, and document analysis. The use of multiple techniques enabled methodological triangulation and provided a comprehensive understanding of the implementation of participatory Smart Madrasah leadership based on the community's socio-cultural values.

Participant observation was conducted to obtain firsthand information on leadership practices, stakeholder interactions, decision-making processes, the integration of digital technology, and community participation in the daily activities of the madrasah. The researcher directly observed meetings, educational programs, digital governance practices, and collaborative activities involving teachers, students, parents, school committees, alumni, religious leaders, and community members.

Semi-structured in-depth interviews were carried out with key informants, including the madrasah principal, vice principals, teachers, educational staff, students, school committee members, parents, alumni, religious leaders, and representatives of the local community. This interview format allowed the researcher to explore participants' experiences, perceptions, and leadership practices while maintaining sufficient flexibility to probe emerging issues relevant to the research objectives.

Document analysis was employed to complement and validate the findings obtained through observation and interviews. The documents analyzed included the madrasah's strategic plans, annual work programs, organizational structure, policy documents, meeting minutes, digital administration records, reports of educational activities, photographs, and other institutional archives related to the implementation of the Smart Madrasah program.

To ensure the trustworthiness of the findings, the study applied data triangulation by comparing information obtained from different participants, data collection techniques, and documentary sources. Data collection was conducted continuously until data saturation was achieved, indicating that no substantial new information emerged and that the collected data adequately addressed the research objectives.

Data Analysis

The data were analyzed using the interactive model of Miles, Huberman, and Saldaña, which consists of three interrelated stages: data condensation, data display, and conclusion drawing and verification. These stages were conducted simultaneously throughout the research process, allowing continuous interaction between data collection and analysis to generate findings that accurately reflected the empirical realities of the field.

The first stage, data condensation, involved selecting, focusing, coding, categorizing, and simplifying the raw data obtained from participant observation, in-depth interviews, and document analysis. During this process, the researcher organized the data according to the research objectives, identifying themes related to participatory leadership, Smart Madrasah development, digital transformation, community participation, and socio-cultural values.

The second stage, data display, involved organizing the condensed data into descriptive narratives, thematic matrices, and conceptual categories to facilitate interpretation. The researcher systematically compared information obtained from different participants and data sources to identify relationships, similarities, differences, and emerging patterns regarding leadership practices and Smart Madrasah implementation.

The final stage, conclusion drawing and verification, involved interpreting the findings by identifying recurring themes, patterns, and relationships among the collected data. Preliminary conclusions were continuously verified through repeated examination of the data, comparison across multiple sources, and triangulation of observation, interview, and documentary evidence. This iterative process ensured that the conclusions remained consistent with the empirical evidence and accurately represented the experiences and perspectives of the research participants.

To enhance the rigor of the analysis, the study employed source triangulation, methodological triangulation, and member checking, enabling the researcher to validate interpretations with participants and ensure the credibility, dependability, and confirmability of the findings. Through this systematic analytical process, the study developed a comprehensive understanding of how participatory leadership, digital transformation, and the community's socio-cultural values interact to support the development of a sustainable Smart Madrasah model in the Society 5.0 era.

III. RESULTS

The findings demonstrate that the development of the participatory Smart Madrasah leadership model at MA Darul Huda Gumukmas Jember is founded on collaborative leadership that actively involves multiple stakeholders in educational governance. Rather than adopting a centralized leadership style, the madrasah principal encourages the participation of teachers, educational staff, students, parents, the school committee, alumni, religious leaders, and the local community in planning, implementing, monitoring, and evaluating educational programs. Decision-making is carried out through deliberative forums, regular evaluation meetings, and collaborative discussions, reflecting the principles of transparency, shared responsibility, and collective ownership.

The study further reveals that the social culture of the community serves as the primary foundation for participatory leadership. Local values such as *musyawarah* (deliberation), *gotong royong* (mutual cooperation), social solidarity, respect for *ulama* (Islamic scholars), and strong community trust strengthen collaboration between the madrasah and society. These cultural values foster broad stakeholder participation and reinforce the legitimacy of educational transformation within the local community.

Regarding digital transformation, the findings indicate that the Smart Madrasah initiative has been implemented through the gradual integration of digital technologies, including digital administrative systems, online attendance, technology-assisted learning, social media-based communication, and online information management. However, technology adoption is carried out incrementally, taking into consideration the readiness of teachers, students, parents, and the surrounding community. The principal adopts a facilitative leadership approach by providing continuous support and professional development to improve teachers' digital competencies.

The research also highlights the importance of organizational learning and digital literacy development. Teachers receive training in digital learning media, application-based administration, and innovative instructional practices. The principal functions not only as an administrator but also as a mentor and facilitator who encourages collaborative learning among teachers. This approach contributes to a supportive organizational culture that promotes continuous professional growth and adaptation to technological change.

Another significant finding is that digital transformation does not diminish the religious identity of the madrasah. Instead, technology is integrated with Islamic values and local traditions. Religious activities, including *istighasah*, classical Islamic studies, and character education, remain central to the educational process, while digital technology is utilized to enhance educational quality, communication, and institutional management. Consequently, Smart Madrasah development reflects a balance between technological innovation and Islamic character formation.

The study further demonstrates that parents, alumni, religious leaders, and community members play essential roles in supporting Smart Madrasah development. Alumni contribute technological resources and digital promotion, parents participate in program evaluation, while religious leaders and community members provide moral support and social legitimacy. This collaborative governance strengthens public trust in the institution and reinforces the madrasah's role as a community-based educational institution.

Several implementation challenges were also identified, including limited technological infrastructure, uneven digital literacy among senior teachers, inconsistent internet access for some families, and varying levels of readiness to embrace digital transformation. To address these challenges, the madrasah principal employs a persuasive, dialogical, and religiously grounded leadership approach, emphasizing gradual adaptation rather than compulsory change. This strategy successfully minimizes resistance and promotes broader acceptance of digital innovation.

Finally, the findings indicate that the participatory Smart Madrasah model has produced positive educational outcomes. Public confidence in the madrasah has increased, community participation has expanded, student enrollment has continued to grow, and students have demonstrated improved learning motivation and digital literacy. At the same time, the madrasah maintains close supervision to ensure that technological advancement remains aligned with Islamic ethics, discipline, and character education. These findings suggest that a participatory Smart Madrasah leadership model grounded in the community's socio-cultural values provides a sustainable and contextually appropriate framework for Islamic educational leadership in the Society 5.0 era.

Discussions

The findings demonstrate that the development of a participatory Smart Madrasah leadership model in the Society 5.0 era extends beyond the adoption of digital technologies. Instead, successful digital transformation depends on leadership that integrates technological innovation with the socio-cultural values of the community. At MA Darul Huda Gumukmas Jember, the madrasah principal acts not only as an administrator but also as a facilitator, collaborator, and community leader who mobilizes teachers, students, parents, alumni, religious leaders, and the wider community in educational decision-making. This finding supports participatory leadership theory, which emphasizes shared responsibility, collaborative governance, and stakeholder engagement in improving educational quality.

The study also confirms that local social culture functions as an enabling factor for educational innovation rather than as a barrier to modernization. Values such as *musyawarah* (deliberation), *gotong royong* (mutual cooperation), social solidarity, respect for *ulama*, and collective responsibility create strong social capital that facilitates the implementation of Smart Madrasah. These findings extend previous studies by demonstrating that digital transformation is more sustainable when technological innovation is embedded within the cultural values and traditions of the local community.

Another important finding concerns the human-centered implementation of Society 5.0. The digital transformation observed in this study was implemented gradually through dialogue, mentoring, and capacity building rather than through mandatory technological change. This adaptive approach reduced resistance among teachers and parents while increasing their willingness to participate in digital innovation. The findings therefore reinforce the principle that Society 5.0 should prioritize technology as a tool to enhance human welfare rather than as an end in itself.

The study further demonstrates that participatory leadership contributes to the development of organizational learning within the madrasah. Continuous professional development, peer collaboration, digital literacy training, and open communication enable teachers to improve their competencies while strengthening institutional adaptability. These findings suggest that sustainable Smart Madrasah development depends on cultivating a collaborative learning culture supported by visionary and participatory leadership.

In addition, the integration of Islamic values with digital transformation distinguishes the Smart Madrasah model from conventional digital school initiatives. Religious education, character development, and community-based activities remain central to the educational process, while technology serves as an instrument to strengthen educational services, communication, and institutional management. Consequently, modernization and religious identity are not viewed as contradictory but as complementary components of educational transformation.

Finally, the findings indicate that broad stakeholder participation enhances institutional legitimacy and public trust. The involvement of parents, alumni, religious leaders, and community organizations creates shared ownership of educational development, resulting in stronger community support and greater sustainability of Smart Madrasah initiatives. This collaborative governance model demonstrates that successful educational transformation requires both technological readiness and strong social partnerships.

Novelty and Contribution

The principal novelty of this study lies in the development of a participatory Smart Madrasah leadership model grounded in the community's socio-cultural values within the Society 5.0 framework. Unlike previous studies that have examined participatory leadership, digital transformation, or community participation separately, this research integrates these three dimensions into a comprehensive conceptual model for Islamic educational leadership. From a theoretical perspective, this study contributes to the advancement of Islamic educational leadership by synthesizing participatory leadership theory, digital transformation theory, community-based Islamic education, and the Society 5.0 concept. The proposed model demonstrates that effective Smart Madrasah development requires the interaction of four interconnected dimensions: participatory governance, digital innovation, socio-cultural values, and Islamic character education.

From a practical perspective, the findings provide a strategic framework for madrasah principals and educational policymakers to implement digital transformation without compromising Islamic identity or local

cultural values. The study highlights practical strategies, including collaborative decision-making, stakeholder engagement, digital literacy development, gradual technology adoption, and culturally responsive leadership. From a policy perspective, the proposed model offers guidance for ministries of education, Islamic educational institutions, and school administrators in designing sustainable Smart Madrasah policies that combine technological advancement with community participation and religious values. The findings suggest that digital transformation policies should prioritize human resource development, organizational learning, and community collaboration alongside technological investment.

Overall, this study contributes a human-centered, culturally responsive, and participatory Smart Madrasah leadership model that provides a sustainable framework for managing Islamic educational institutions in the Society 5.0 era while preserving local wisdom, strengthening community engagement, and promoting high-quality digital education.

Limitation and future study

This study has several limitations that should be considered when interpreting its findings. First, the research was conducted at MA Darul Huda Gumukmas Jember as a single-case qualitative study. Consequently, the findings reflect the unique socio-cultural, religious, and organizational characteristics of the institution and may not be directly generalizable to other madrasahs with different cultural, geographical, or institutional contexts.

Second, the study primarily relied on qualitative data obtained through participant observation, in-depth interviews, and document analysis. Although data triangulation was employed to enhance the credibility and trustworthiness of the findings, the absence of quantitative measures limits the ability to evaluate the statistical relationships among participatory leadership, digital transformation, community participation, and educational outcomes.

Third, this research focused mainly on the leadership process and the development of the Smart Madrasah model, without conducting a long-term evaluation of its impact on students' academic achievement, teachers' professional performance, institutional effectiveness, or digital competence. Therefore, the long-term sustainability and measurable outcomes of the proposed leadership model remain to be examined.

Future research should expand the scope of investigation by conducting comparative studies across multiple madrasahs with diverse socio-cultural characteristics and organizational settings. Comparative research would provide broader empirical evidence regarding the applicability and adaptability of the proposed participatory Smart Madrasah leadership model.

In addition, future studies are encouraged to employ mixed-methods or quantitative approaches to examine the relationships among participatory leadership, digital literacy, community engagement, organizational culture, and educational performance. Such approaches would provide stronger empirical validation of the conceptual model developed in this study.

Finally, future research may explore the integration of emerging Society 5.0 technologies, such as artificial intelligence (AI), learning analytics, big data, the Internet of Things (IoT), and adaptive learning systems, within Smart Madrasah governance while maintaining Islamic values and local socio-cultural traditions. This direction would further enrich the development of innovative, sustainable, and culturally responsive leadership models for Islamic educational institutions in the digital era.

Implications and Suggestions

Implications

The findings of this study have important **theoretical, practical, and policy implications** for the development of Islamic educational leadership in the Society 5.0 era.

From a **theoretical perspective**, this study enriches the literature on Islamic educational leadership by proposing a participatory Smart Madrasah leadership model that integrates participatory leadership theory, digital transformation, community-based Islamic education, and the Society 5.0 framework. The findings demonstrate that successful digital transformation in madrasahs depends not only on technological infrastructure but also on leadership that is culturally responsive, collaborative, and grounded in Islamic values.

From a **practical perspective**, the study provides guidance for madrasah principals in implementing digital transformation through participatory governance. The findings suggest that teachers, students, parents, school committees, alumni, religious leaders, and the wider community should be actively involved in educational planning, implementation, and evaluation. Strengthening digital literacy, promoting organizational learning, and maintaining open communication are essential strategies for achieving sustainable Smart Madrasah development.

From a **policy perspective**, the study indicates that educational policymakers should support Smart Madrasah initiatives by providing adequate digital infrastructure, continuous professional development for teachers and school leaders, and policies that encourage collaboration between madrasahs and local communities. Digital transformation policies should emphasize both technological innovation and the preservation of Islamic values and local cultural identity.

Suggestions

Based on the findings, several recommendations are proposed:

1. **For madrasah principals:** Adopt participatory leadership practices that encourage collaboration, transparency, and shared decision-making while promoting continuous digital innovation aligned with Islamic values.
2. **For teachers:** Continuously improve digital literacy and pedagogical competencies to integrate technology effectively into teaching and learning while maintaining character education and religious values.
3. **For educational policymakers:** Develop policies that strengthen digital infrastructure, provide sustainable training programs, and facilitate partnerships among madrasahs, higher education institutions, local governments, and community organizations.
4. **For local communities and stakeholders:** Maintain active participation in supporting Smart Madrasah development through collaborative educational programs, resource sharing, and community engagement to strengthen institutional sustainability.
5. **For future researchers:** Conduct comparative, longitudinal, and mixed-methods studies involving different types of madrasahs and cultural settings to validate and further refine the participatory Smart Madrasah leadership model proposed in this study.

Overall, the successful implementation of a participatory Smart Madrasah requires the integration of **technology, participatory leadership, Islamic values, and the community's socio-cultural capital**. Such integration provides a sustainable pathway for improving the quality and relevance of Islamic education in the Society 5.0 era.

IV. CONCLUSION

This study concludes that the development of a participatory Smart Madrasah leadership model at MA Darul Huda Gumukmas Jember is achieved through the integration of participatory leadership, digital transformation, Islamic values, and the socio-cultural capital of the local community. The findings demonstrate that successful Smart Madrasah development depends not only on the adoption of digital technologies but also on the active involvement of teachers, educational staff, students, parents, school committees, alumni, religious leaders, and the wider community in educational planning, implementation, evaluation, and continuous improvement.

The study further reveals that local cultural values particularly *musyawarah* (deliberation), *gotong royong* (mutual cooperation), social solidarity, and respect for religious leaders provide a strong foundation for collaborative governance and sustainable educational transformation. These values strengthen public trust, encourage collective responsibility, and facilitate the implementation of digital innovation without diminishing the madrasah's Islamic identity.

The implementation of Smart Madrasah at MA Darul Huda follows a human-centered and adaptive approach to digital transformation. Rather than emphasizing technology as an end in itself, the madrasah utilizes digital tools to improve educational services, strengthen communication, enhance digital literacy, and support character education while maintaining Islamic principles and local traditions. The findings indicate that gradual implementation, continuous mentoring, and collaborative learning are more effective than compulsory technological change in promoting sustainable institutional transformation.

The study also contributes to the advancement of Islamic educational leadership by proposing a culturally responsive participatory Smart Madrasah leadership model that integrates participatory governance, digital innovation, community engagement, and Islamic values within the Society 5.0 framework. This model offers both a conceptual foundation for future research and a practical reference for madrasah leaders and policymakers seeking to implement sustainable, inclusive, and contextually relevant digital transformation in Islamic educational institutions.

Overall, this study demonstrates that the future of Smart Madrasah development in the Society 5.0 era lies not merely in technological advancement but in the effective integration of human-centered leadership, community participation, digital innovation, and Islamic educational values to achieve sustainable educational excellence.

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