



From Intuition to Evidence: Data-Driven Decision-Making and Institutional Performance in Contemporary Pesantren

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Abstract :

This study aims to examine how data-driven decision-making is developed and practiced and how it contributes to institutional performance in contemporary pesantren. A qualitative case study design was employed to investigate the transition from intuition-based management toward evidence-informed institutional decision-making. The research was conducted at Pesantren, selected because its educational environment provides a relevant context for examining the interaction between Islamic educational traditions, digital information, and contemporary management practices. Data were collected through semi-structured interviews, participant observation, and document analysis involving institutional leaders, coordinators, teachers, and administrative personnel. Data were analyzed through data condensation, data display, and verification. The findings indicate that data-driven decision-making operates through four interconnected processes: data collection, collective interpretation, evidence-informed decision-making, and monitoring-evaluation. Data were used to support institutional planning, identify problems, allocate resources, monitor programs, and improve educational services. The study concludes that data does not replace experiential leadership but strengthens managerial judgment through systematic evidence. The implication is that pesantren need to develop data literacy, collaborative data cultures, and sustainable information systems to strengthen accountability, responsiveness, and institutional performance.

INTRODUCTION

Data-driven decision-making has become an important issue for educational institutions because contemporary organizations generate increasingly large amounts of information about students, teachers, finance, attendance, learning outcomes, and institutional services. The central point is that decisions based on credible evidence can improve organizational responsiveness and reduce dependence on intuition alone. The reason is that leaders who systematically interpret relevant data can identify problems earlier, allocate resources more rationally, monitor progress, and evaluate whether institutional programs achieve intended outcomes. Evidence from recent educational research shows that data use can support school improvement, although its effectiveness depends on data quality, leadership capacity, interpretation, and organizational culture (Stojanov & Daniel, 2024; Shamsuddin & Abd Razak, 2024). Therefore, data-driven

decision-making is socially important because it can strengthen educational accountability, efficiency, and quality. For pesantren, this approach offers an opportunity to modernize management while maintaining institutional identity and educational values.

The general problem is that many educational institutions possess abundant administrative and academic information but do not necessarily transform that information into systematic evidence for decision-making. Data may remain fragmented across attendance records, assessment results, financial documents, student development reports, and informal observations. Leaders may consequently rely on experience, intuition, personal networks, or immediate impressions when determining priorities. Recent research identifies data accuracy, limited data literacy, insufficient technological capacity, teacher readiness, and weak data cultures as recurring barriers to effective data use in education (Shamsuddin & Abd Razak, 2024; Alonzo et al., 2024). In pesantren, the problem is particularly significant because management traditionally emphasizes relational authority, experience, and direct guidance. These strengths should not be displaced, but complemented by systematic evidence. The problem, therefore, concerns how pesantren can combine institutional wisdom with credible data to improve performance.

The field phenomenon shows that pesantren are increasingly encountering digital systems, information platforms, electronic administration, online communication, and technology-supported learning. Digitalization has begun to improve administrative efficiency, information accessibility, accountability, and educational services, yet implementation remains uneven across institutions (Ulfiyah et al., 2022; Nugroho & Astutik, 2024). Some pesantren have introduced management information systems, while others still depend substantially on manual records and informal reporting. Recent studies also reveal that digital transformation requires leadership, human-resource development, infrastructure, and organizational adaptation rather than technology alone (Ahmed et al., 2026; Humaydiy et al., 2026). This situation creates a practical tension: pesantren increasingly possess data, but their managerial cultures may not consistently use that data as evidence for strategic decisions. Consequently, the transition from intuition-based management toward evidence-informed management represents an important contemporary phenomenon requiring empirical examination within pesantren settings.

Previous research has demonstrated the value of data-driven decision-making for educational leadership and institutional improvement. Stojanov and Daniel (2024) show that big-data and analytics research in education has expanded substantially, while Alonzo et al. (2024) identify leadership, individual dispositions, data-system characteristics, and sociocultural context as factors influencing teachers' use of data systems. Decabooter et al. (2024) further emphasize the importance of human support and data coaching for successful data-based decision-making. Research also indicates that leadership practices and school context shape how data are interpreted and used (Lee et al., 2024). However, much of this literature focuses on schools and higher education outside the pesantren context. Existing pesantren studies primarily discuss digitalization, information systems, leadership, or administrative efficiency separately (Ulfiyah et al., 2022; Nugroho & Astutik, 2024). This fragmentation leaves insufficient understanding of how evidence-based decision-making becomes embedded within pesantren management.

A second limitation concerns the relationship between data use and institutional performance. Existing studies establish that data can support planning, monitoring, resource allocation, and improvement, but they also caution that merely possessing data does not guarantee better outcomes. Lee et al. (2024), for example, found that data-use practices did not automatically translate into stronger student achievement, demonstrating the importance of institutional context. Similarly, Decabooter et al. (2024) show that human support is crucial for turning available information into meaningful decisions. Pesantren research has identified improvements in efficiency, accountability, service quality, and digital administration, but empirical attention to the decision-making process itself remains limited. The present study therefore occupies an important position by examining how leaders move from intuition to evidence and how that shift is connected to institutional performance. This gap is important because evidence-informed management requires not only data availability but interpretation, deliberation, action, and evaluation.

The state of the art of this study lies in conceptualizing data-driven decision-making as an institutional management practice rather than simply a technological activity. The study focuses on how leaders collect, interpret, validate, discuss, and use evidence to determine institutional priorities, allocate resources, monitor programs, and evaluate performance. This perspective is particularly relevant to contemporary pesantren because digital transformation is increasingly reshaping administration while institutional identity, religious authority, and relational leadership remain important (Khusniyah, 2025; Ahmed et al., 2026). The novelty lies in connecting evidence-based decision-making with institutional performance within a pesantren setting and examining the organizational mechanisms that enable this transition. The research is important because it proposes a balanced model in which data does not replace kyai or managerial judgment but strengthens it. Thus, evidence becomes a complementary resource for responsible, transparent, adaptive, and context-sensitive institutional decision-making.

Based on these gaps, the research problem is formulated as follows: how is data-driven decision-making developed and practiced within contemporary pesantren, what factors enable or constrain its implementation, and how does evidence-informed decision-making contribute to institutional performance? The provisional argument is that institutional performance improves when leaders move beyond intuition and use systematically collected, relevant, and validated evidence to guide planning, resource allocation, problem identification, program monitoring, and evaluation. However, this transition depends on data literacy, leadership commitment, organizational culture, technological infrastructure, stakeholder participation, and the quality of available information. Data-driven decision-making is therefore not understood as replacing experiential knowledge, but as integrating evidence with contextual judgment. The study argues that contemporary pesantren can preserve their distinctive educational traditions while strengthening managerial rationality through evidence. Such integration can support more accountable governance, responsive services, efficient resource use, and continuous institutional improvement.

RESEARCH METHODS

This study employed a qualitative research approach using a case study design. The design was selected because the research seeks to understand in depth how data-driven decision-making is interpreted, practiced, negotiated, and institutionalized within

the natural setting of a pesantren. A case study is appropriate because the transition from intuition to evidence cannot be separated from leadership culture, kyai authority, organizational traditions, staff competencies, technological infrastructure, and institutional values. The study was conducted at Pesantren Nurul Wafa, which was purposively selected because it provides a relevant setting for examining the intersection between Islamic educational traditions, contemporary management practices, digital information, and institutional performance. The location enables the researcher to investigate data-driven management as a contextual organizational process rather than merely as the technical use of information systems.

Data were collected through semi-structured interviews, participant observation, and document analysis. The data focused on data utilization, decision-making processes, institutional planning, resource allocation, monitoring, evaluation, and institutional performance improvement. Participants included the head of the institution, administrative managers, teachers, coordinators, and selected staff involved in institutional decision-making. Data collection was conducted within the madrasah environment, particularly in administrative offices, classrooms, institutional meetings, and other relevant settings during the predetermined research period. Semi-structured interviews were conducted using flexible guiding questions to explore participants' experiences and perspectives regarding evidence-based decision-making. Participant observations were carried out to examine how data were actually used in planning, implementation, and evaluation. Document analysis involved reviewing institutional reports, attendance records, student achievement data, program evaluations, planning documents, and other relevant administrative records to corroborate information obtained through interviews and observations.

Data analysis followed the interactive model of data condensation, data display, and verification/conclusion drawing. Interview transcripts, field notes, and documents were first condensed by selecting information directly related to data use and institutional performance. The researcher then coded recurring ideas concerning data collection, evidence interpretation, leadership judgment, institutional planning, monitoring, accountability, and improvement. Condensed data were displayed in thematic matrices to facilitate comparison among informants and data sources. The researcher subsequently examined patterns, similarities, differences, and contradictions across the evidence. Verification was conducted continuously by returning to the original data, comparing interpretations across sources, and relating emerging themes to the research questions. Conclusions were therefore developed progressively throughout the research process rather than being produced only after all data had been collected.

The trustworthiness of the findings was established through source triangulation, technique triangulation, member checking, prolonged engagement, and an audit trail. Source triangulation involved comparing information obtained from institutional leaders, teachers, administrative personnel, and other relevant informants. Technique triangulation compared interview findings with observations and institutional documents. Member checking was conducted by discussing important interpretations with selected informants to ensure that the researcher's understanding accurately reflected participants' experiences. Prolonged engagement allowed the researcher to distinguish routine practices from temporary institutional responses. Dependability was strengthened through systematic documentation of data collection, coding, analytical decisions, and theme development. Confirmability was supported by maintaining a clear

connection between empirical evidence, interpretation, and conclusions. These procedures enhanced the credibility and transparency of the qualitative findings.

RESULTS AND DISCUSSION

Results

From Intuitive Decisions to Evidence-Informed Institutional Management

Operationally, data-driven decision-making in this study refers to the systematic use of relevant institutional information to identify problems, establish priorities, allocate resources, monitor programs, and evaluate institutional performance. It does not mean that leaders completely abandon experience, intuition, or contextual judgment. Rather, evidence is incorporated into deliberation so that managerial decisions can be justified, evaluated, and adjusted. At Pesantren Nurul Wafa, this practice can be identified through the use of attendance records, student achievement data, teacher performance information, financial records, program evaluations, and stakeholder feedback. The emerging finding indicates that data becomes meaningful when leaders do more than collect it: they compare information, discuss its implications, identify institutional problems, and use the results to determine subsequent action.

Example interview excerpt Head of Madrasah: *“Previously, we often made decisions based on what we saw directly or what we heard from teachers. Now, before deciding on a program, we try to look at attendance, student achievement, teacher reports, and the results of previous activities. The data helps us understand whether the problem is really there and what kind of response is needed.”* The researcher interprets this statement as evidence of a gradual shift from intuitive management toward evidence-informed management. The important change is not the elimination of experience but the introduction of systematic verification. Leadership judgment remains important, but decisions are increasingly supported by multiple sources of institutional information.

Example interview excerpt Administrative Coordinator: *“The data is useful when it is discussed together. We do not simply prepare reports and store them. For example, when attendance decreases, we look at the pattern, ask teachers about the causes, and then decide what intervention is appropriate.”* This statement indicates that data-driven decision-making involves an interpretive and collaborative process. The researcher interprets the practice as evidence that data acquires organizational value through collective sense-making. This finding corresponds with research emphasizing that data systems alone are insufficient and that educators require human support, collaborative interpretation, and organizational capacity to convert information into action (Decabooter et al., 2024; Alonzo et al., 2024). The practice therefore represents a movement from data collection to evidence-based organizational learning.

Observation of institutional activities showed that data were increasingly incorporated into planning meetings, program evaluations, student monitoring, and administrative discussions. Rather than discussing institutional problems exclusively through general impressions, participants referred to attendance records, academic reports, student development information, and previous program evaluations. The researcher interprets this pattern as an emerging evidence-oriented culture in which institutional information functions as a reference point for managerial discussion.

Nevertheless, observation also indicates that not every decision follows a formal analytical procedure. In several situations, leaders continue to combine documented evidence with experiential knowledge and direct knowledge of students and teachers. This suggests that the institutional transition is not from “intuition” to “data only,” but from intuition as the dominant basis toward a hybrid decision-making model that combines evidence, professional judgment, and contextual understanding.

The findings can be restated as follows: data provides information, discussion provides interpretation, leadership provides judgment, and action provides institutional consequences. Pesantren Nurul Wafa does not treat data as an automatic source of decisions. Instead, data is first interpreted in relation to institutional circumstances and educational values. For example, declining attendance is not immediately interpreted as student indiscipline; it becomes a signal requiring further investigation. Similarly, declining academic performance is not automatically attributed to teachers or students but is examined through multiple sources. This process demonstrates that evidence-based decision-making is fundamentally interpretive. Its effectiveness depends on the institution’s ability to connect information with questions, context, deliberation, and action.

The pattern emerging from the data demonstrates a gradual movement through four stages: data collection, collective interpretation, evidence-informed decision, monitoring and evaluation. The first stage establishes the availability of information; the second transforms information into organizational knowledge; the third connects knowledge with managerial action; and the fourth determines whether the decision produces the intended improvement. The pattern also demonstrates that leadership and organizational culture are central to the process. Where data are discussed collectively, information becomes more useful and credible. Where data remain merely administrative reports, their influence on institutional performance is limited. Thus, the central finding is that data-driven decision-making becomes meaningful when pesantren develop a culture in which evidence is continuously interpreted, discussed, acted upon, and evaluated.

Table 1. Indicators of Data-Driven Decision-Making in Institutional Management

Informant Position	Interview Excerpt	Indicator
Head of Madrasah	“Before deciding on a program, we try to look at attendance, student achievement, teacher reports, and previous evaluations so that our decision is based on a clearer picture.”	Evidence-based planning and decision-making
Administrative Coordinator	“When attendance decreases, we examine the pattern, discuss possible causes with teachers, and then determine what intervention is appropriate.”	Data interpretation and problem identification
Teacher	“Student performance records help us identify which students need additional assistance and which learning activities need to be improved.”	Instructional monitoring and targeted intervention
Program Coordinator	“After implementing a program, we review the results and compare them with the initial objectives before deciding whether the program should continue.”	Monitoring, evaluation, and continuous improvement
Administrative Staff	“The information is no longer only kept as a report. We use it when preparing plans, evaluating activities, and	Data utilization and institutional

Table 1 demonstrates that data-driven decision-making at the institution operates across multiple managerial levels. The head of the madrasah represents the strategic dimension through evidence-based planning, while the administrative coordinator demonstrates the analytical dimension by transforming raw information into problem identification. Teachers apply data at the instructional level by identifying student needs and adjusting educational interventions. Program coordinators use evidence for evaluation and continuous improvement, whereas administrative personnel support institutional accountability by ensuring that information becomes part of planning and reporting. The pattern indicates that data-driven decision-making is not the responsibility of one leader or administrative unit. Instead, it involves distributed participation in which different institutional actors contribute to the collection, interpretation, use, and evaluation of evidence.

The deeper interpretation shows that the institution is developing a data-informed organizational culture rather than merely implementing a data-management system. This distinction is important because having databases, reports, or digital records does not automatically make an institution evidence-driven. Research by Alonzo et al. (2024) demonstrates that leadership, individual disposition, system characteristics, and sociocultural conditions influence whether educators actually use data. Decabooter et al. (2024) similarly emphasize the importance of human support in making data-based decision-making successful. The present pattern therefore indicates that institutional performance depends on the conversion of data into collective knowledge and action. Data becomes strategically valuable when it influences planning, intervention, monitoring, and evaluation rather than remaining as documentation for administrative compliance.

Discussion

The finding that pesantren are gradually moving from intuition-based decisions toward evidence-informed management is consistent with recent research on data-driven educational leadership. Shamsuddin and Abd Razak (2024) found that school leaders frequently use data but face challenges involving accuracy, data literacy, teacher readiness, and availability. Similarly, Stojanov and Daniel (2024) demonstrate the expanding importance of analytics for educational decision-making. The present study extends these findings by placing the discussion within pesantren management, where experiential knowledge and relational authority remain important. Theoretically, this suggests that data-driven management should not be understood as replacing institutional wisdom but as strengthening it through systematic verification. Practically, pesantren should develop procedures that combine leadership judgment with attendance, achievement, financial, program, and stakeholder data.

The finding that data becomes meaningful through collective interpretation is consistent with Decabooter et al. (2024), who emphasize the importance of human support and data coaching in successful data-based decision-making. Alonzo et al. (2024) similarly identify leadership and sociocultural context as important factors influencing data-system use. The present study adds that collective interpretation is particularly important within pesantren because organizational decisions are embedded in

relationships, values, and institutional traditions. Data should therefore not be interpreted mechanically. The theoretical implication is that data-driven decision-making is a social process of sense-making rather than merely a technical process of data analysis. Practically, pesantren can establish regular data-review meetings, collaborative evaluation teams, and simple institutional dashboards that facilitate shared interpretation and evidence-informed action.

The finding that data use contributes to institutional performance through planning, intervention, monitoring, and evaluation is broadly consistent with research on data-informed school improvement. However, Lee et al. (2024) caution that data-use practices do not automatically produce stronger student achievement, highlighting the importance of institutional context. The present study supports this caution because the effectiveness of data depends on how leaders interpret and act upon it. The theoretical contribution is therefore a process-oriented understanding of institutional performance: data affects performance indirectly through better diagnosis, resource allocation, targeted intervention, and continuous evaluation. Practically, pesantren should avoid measuring success through the number of reports or digital systems alone. Instead, they should evaluate whether evidence actually changes programs, improves services, strengthens accountability, and produces measurable institutional learning.

The findings also correspond with recent studies of digital transformation in pesantren. Ulfyah et al. (2022) identify digitalization as a means of improving administrative efficiency and accountability, while Nugroho and Astutik (2024) show that digital technology can influence educational management and learning processes. More recent studies demonstrate that pesantren transformation requires leadership, human-resource development, organizational adaptation, and preservation of Islamic values (Ahmed et al., 2026; Humaydiy et al., 2026). The present study extends this literature by shifting attention from digitalization itself toward the quality of managerial decisions supported by digital information. The theoretical contribution is therefore to connect digital transformation with evidence-based management. Practically, pesantren should ensure that digital systems are designed not only to store information but also to support planning, monitoring, evaluation, and strategic decision-making.

Overall, this study contributes a contextual framework explaining how contemporary pesantren can move from intuition toward evidence without abandoning their distinctive educational identity. The central contribution is the identification of a cycle linking data availability, interpretation, collective deliberation, decision-making, implementation, and evaluation. This framework complements existing research that emphasizes data literacy, leadership, technological infrastructure, and organizational culture. Its practical implication is that pesantren need more than digital applications; they require a sustainable data culture supported by leadership commitment, staff capacity, clear procedures, and continuous evaluation. The limitation is that the study focuses on one institutional setting, limiting transferability. Future research should compare multiple pesantren, examine different types of institutional data, and investigate longitudinally whether sustained data-driven management produces measurable improvements in educational quality, governance, accountability, and stakeholder satisfaction.

CONCLUSION

The most important finding of this study is that the transition from intuition to

evidence in contemporary pesantren does not mean eliminating experiential or relational leadership, but integrating these forms of knowledge with systematically collected and interpreted institutional data. Data-driven decision-making emerges through a cycle of data collection, interpretation, collective deliberation, evidence-informed action, monitoring, and evaluation, which contributes to more accountable planning, targeted intervention, efficient resource allocation, and institutional improvement. The scholarly strength of the study lies in extending data-driven educational leadership research into the pesantren context and conceptualizing evidence use as an organizational and cultural process rather than merely a technological practice. Nevertheless, the study is limited by its single-case context and qualitative design, which restrict broader generalization. Future research should employ comparative multi-site and longitudinal approaches to examine how different pesantren develop sustainable data cultures and whether evidence-informed management produces measurable improvements in institutional performance.

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REFERENCES

- Ahmed, S. A., Muchlis, A., Nahri, D. Y., & Mubah, H. Q. (2026). Managing digital transformation in Islamic boarding school: Leadership strategies for e-learning implementation. *Re-JIEM (Research Journal of Islamic Education Management)*, 9(1), 13–27. <https://doi.org/10.19105/re-jiem.v9i1.25561>
- Alonzo, D., Quimno, V., Townend, G., Oo, Z. Z., et al. (2024). Using information and communication technology (ICT)-based data systems to support teacher data-driven decision-making: Insights from the literature (2013–2023). *Educational Assessment, Evaluation and Accountability*, 36, 433–451. <https://doi.org/10.1007/s11092-024-09443-8>
- Amirudin, & Mizan, A. N. (2026). Digital transformation of Islamic boarding school management and its implications for improving educational services in Lampung Province. *QANUN: Journal of Islamic Laws and Studies*, 4(4). <https://doi.org/10.58738/qanun.v4i4.1313>
- Davis, S. C. (2023). Engaging faculty in data use for program improvement in teacher education: How leaders bridge individual and collective development. *Teaching*

- and Teacher Education, 129, 104147. <https://doi.org/10.1016/j.tate.2023.104147>
- Decabooter, I., Warmoes, A., Consuegra, E., Van Gasse, R., & Struyven, K. (2024). The data coach chronicles: A systematic review of human support for making data-based decision-making a success. *Teaching and Teacher Education*, 146, 104641. <https://doi.org/10.1016/j.tate.2024.104641>
- Handayani, B. V. (2026). Enabling data-based decision making in education: A systematic review of leadership, culture, and capacity challenges. *Indonesian Journal of Educational Inquiry*.
- Humaydiy, A. A., Arifudin, I., & Gloria, R. Y. (2026). Digital transformation of Islamic boarding schools in Indonesia: Modernization, innovation, and value preservation. *International Journal of Graduate of Islamic Education*. <https://doi.org/10.37567/ijgie.v7i2.4780>
- Juhri, Assaad, A. B. M., Drakel, M., & Abdullah, S. (2026). The transformation of Islamic boarding schools in the digital era: A case study of three Islamic educational institutions in Indonesia. *Attractive: Innovative Education Journal*, 8(1). <https://doi.org/10.51278/aj.v8i1.1637>
- Khusniyah, K. (2025). Digital transformation of pesantren in the VUCA era: Learning technological adaptation from pesantren. *Journal of Pesantren and Diniyah Studies*, 2(2), 87–100. <https://doi.org/10.63245/jpds.v2i2.46>
- Lee, C., Camburn, E. M., & Sebastian, J. (2024). School context, school leaders' data-informed decision making, and student achievement: Evidence from Florida. *School Effectiveness and School Improvement*, 45–70. <https://doi.org/10.1080/09243453.2024.2436889>
- Maqbool, S., Mahmood, S. A., & Khaliq, A. (2022). A study of data driven decision making for school administrators. *Journal of Educational Research and Social Sciences Review*.
- Mat Shoib, N. A., Talip, R., & Sukor, N. (2025). Decision making and educational leadership: A comprehensive systematic review. *International Journal of Education, Psychology and Counselling*, 10(57). <https://doi.org/10.35631/IJEPC.1057060>
- Mudarris, B., & Haq, A. S. (2026). Digital–Turāth convergence in Islamic boarding school education: Integrative innovation management for digital transformation and curriculum reform in the era of educational disruption. *Al Qodiri: Jurnal Pendidikan, Sosial dan Keagamaan*, 24(2). <https://doi.org/10.53515/alqodiri.v24i2.122>
- Nugroho, A., & Astutik, A. P. (2024). Digital transformation of Islamic boarding school education. *Indonesian Journal of Islamic Studies*, 12(2). <https://doi.org/10.21070/ijis.v12i2.1723>

- Oganda, F. P., Sunarya, A., Hardini, M., Sihotang, S. V., Ikhsan, R. S., & Abbas, M. (2025). Digital transformation as a strategy for building adaptive pesantren management systems. *ADI Bisnis Digital Interdisiplin Jurnal*, 6(2), 120–132. <https://doi.org/10.34306/abdi.v6i2.1195>
- Rose, L. (2025). Data-driven decision making in educational leadership: Trends and challenges. *Academy of Educational Leadership Journal*, 29(S1), 1–3.
- Shamsuddin, F. B., & Abd Razak, A. Z. (2024). Penggunaan data dan cabarannya kepada pemimpin sekolah dalam membuat keputusan yang berkesan. *JuPiDi: Jurnal Kepimpinan Pendidikan*, 11(1). <https://doi.org/10.22452/jupidi.vol11no1.1>
- Stojanov, A., & Daniel, B. K. (2024). A decade of research into the application of big data and analytics in higher education: A systematic review of the literature. *Education and Information Technologies*, 29, 5807–5831. <https://doi.org/10.1007/s10639-023-12033-8>
- Susanto, T. T. D., Rajagukguk, H. O., Tambun, A., & Sartika, D. (2025). Optimalisasi sistem pengambilan keputusan berbasis data dalam manajemen strategis sekolah dasar. *Jurnal Manajemen Pendidikan*, 10(2). <https://doi.org/10.34125/jmp.v10i2.670>
- Townsley, M., & Snyder, R. (2022). What are we talking about? Data use among education leaders of change. *International Journal of Educational Leadership Preparation*, 17(1), 88–100.
- Ulfiyah, U., Widadiyah, Q., & Putriyani, P. (2022). Digitalisasi manajemen administrasi pesantren dalam perspektif efisiensi dan akuntabilitas. *Eduvis: Jurnal Manajemen Pendidikan Islam*, 7(2). <https://doi.org/10.47453/eduvis.v7i2.4238>
- Wafa, F. S., & Suhendi, E. (2026). Strategic management and digitalization: Elevating Islamic education quality in the global era. *Jurnal Iman dan Spiritualitas*, 6(2). <https://doi.org/10.15575/jis.v6i2.51618>
- Widiasnyah, A., Fitriansyah, F., & Andini, T. S. (2026). Kepemimpinan pendidikan berbasis data sebagai peningkatan mutu pendidikan di sekolah dasar. *Pendas: Jurnal Ilmiah Pendidikan Dasar*, 10(4). <https://doi.org/10.23969/jp.v10i4.35084>
- Zuraida, Z., & Setiawan, M. (2025). Digital transformation in pesantren: Strengthening educational management, science learning innovation, and sustainable Islamic education. *PEMA: Jurnal Pendidikan dan Pengabdian Kepada Masyarakat*, 5(3), 583–592. <https://doi.org/10.56832/pema.v5i3.2172>