



Constructing Leadership Narratives: Integrating Digital Literacy, EMIS Knowledge, and Value-Based Decision-Making in Islamic Educational Leadership

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ABSTRACT

Background. In the digital era, educational leadership increasingly requires the ability to utilize digital technologies and information systems effectively. In Islamic education institutions, principals are expected to possess adequate digital literacy and a strong understanding of the Education Management Information System (EMIS) to support accurate and timely decision-making processes.

Purpose. This study aims to examine the influence of principals' digital literacy and knowledge of Education Management Information Systems (EMIS) on decision-making processes in Islamic education institutions.

Method. A quantitative approach was employed using survey data collected from 178 principals of Islamic education institutions in Riau Province, Indonesia. The data were analyzed using descriptive statistics and multiple regression analysis to test the proposed hypotheses.

Results. The findings reveal that both digital literacy and EMIS knowledge significantly influence principals' decision-making processes. Digital literacy demonstrates a stronger effect compared to EMIS knowledge. Furthermore, both variables jointly contribute substantially to explaining the variance in decision-making effectiveness among principals.

Conclusion. This study highlights the importance of integrating digital competencies and system-based knowledge in educational leadership. Strengthening principals' digital literacy and enhancing their ability to utilize EMIS can improve the effectiveness and quality of decision-making processes in Islamic education institutions.

KEYWORDS

Decision-Making, Digital Literacy, Islamic Education Leadership

Citation: Akhyar, Y., Ningsih, W., Sutrawati, E., & Lahby, M. (2026). Constructing Leadership Narratives: Integrating Digital Literacy, EMIS Knowledge, and Value-Based Decision-Making in Islamic Educational Leadership. *International Journal of Educational Narrative*, 4(4), 1417–1430.

<https://doi.org/10.70177/ijen.v4i4.3514>

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Received: February 15, 2026

Accepted: June 09, 2026

Published: August 29, 2026

INTRODUCTION

The rapid digital transformation of educational management has fundamentally changed how school leaders plan, coordinate, and make strategic decisions. The integration of digital technologies into educational administration has shifted leadership from conventional management practices toward evidence-based decision-making supported by digital information systems. School principals are increasingly expected to possess digital competencies that enable them to collect,



interpret, and utilize institutional data effectively while responding to increasingly complex organizational challenges (Omari et al., 2023). In this context, digital literacy and the effective use of Education Management Information Systems (EMIS) have become essential capabilities for improving institutional governance, administrative efficiency, and decision quality.

Within Islamic educational institutions, the importance of digital leadership extends beyond technological competence. School principals are required to integrate digital innovation with ethical leadership principles that characterize Islamic educational governance. Decision-making is therefore expected to reflect not only efficiency and effectiveness but also the values of amanah (trustworthiness), 'adl (justice), shūrā (consultation), and mas'ūliyyah (responsibility) (Jazil et al., 2025; Luqman et al., 2025).. These principles provide the ethical foundation through which digital information is interpreted and translated into institutional policies, making the digital transformation of Islamic schools distinct from that of general educational institutions.

From a theoretical perspective, this study is anchored in several complementary frameworks. Transformational and distributed leadership theories emphasize the role of principals as change agents who mobilize digital competencies to foster innovation, collaboration, and organizational improvement (Muktiyanto et al., 2020). The technology competency perspective further explains that digital literacy, technological literacy, and human literacy collectively enable leaders to make accurate, timely, and evidence-based decisions (Galbraith, 2021). Meanwhile, classical management theory, particularly the functions of planning, organizing, actuating, and controlling, provides an operational perspective for understanding EMIS as a strategic management instrument supporting educational planning, monitoring, coordination, and institutional evaluation (Calida et al., 2016). Within Islamic educational institutions, these theoretical perspectives are interpreted through Islamic leadership principles, which serve as the ethical and institutional context in which principals employ digital technologies to achieve accountable and transparent governance rather than as independent explanatory variables.

Empirical studies consistently demonstrate that principals' digital competence contributes positively to educational management and organizational performance. Digital leadership has been associated with improved institutional governance, transparency, collaboration, and administrative coordination (Frost et al., 2016). Likewise, principals with stronger digital literacy tend to utilize educational data more systematically, resulting in more accurate planning, efficient resource allocation, and improved organizational effectiveness (Doyle & Brady, 2018; Dunnion & O'Donovan, 2024). EMIS has also proven to be an important decision-support system by providing reliable information on student performance, attendance, finance, and institutional administration that facilitates planning, monitoring, and evaluation (Austin & Jones, 2024; Richter, 2019; Shaked & Schechter, 2019). Collectively, these studies confirm that digital capability and information systems are indispensable components of contemporary educational leadership.

Nevertheless, several important issues remain insufficiently addressed in the existing literature. First, previous quantitative studies generally examine principals' digital literacy and EMIS utilization as separate determinants of organizational effectiveness, administrative performance, or school improvement. Consequently, limited empirical evidence explains how these two capabilities jointly contribute to principals' decision-making processes. Understanding their complementary influence is particularly important because effective educational decisions require not only digital competence but also the ability to transform institutional data into actionable managerial decisions.

Second, existing digital leadership research remains predominantly technology-oriented, emphasizing innovation, digital competence, and organizational efficiency while paying relatively

limited attention to value-based leadership perspectives. Current digital leadership models explain how technological capability improves organizational outcomes but provide limited insight into how ethical principles shape digital decision-making processes. In Islamic educational institutions, however, managerial decisions are expected to balance technological effectiveness with ethical accountability, consultation, justice, and institutional responsibility. Despite the importance of these values, they have rarely been incorporated into discussions of digital leadership within Islamic educational settings, leaving an important theoretical gap concerning the contextualization of digital leadership in value-based educational organizations.

Third, empirical evidence concerning digital leadership within Islamic educational institutions remains relatively limited compared with studies conducted in general education contexts. Islamic schools operate within distinctive governance systems characterized by religious values, institutional accountability, and unique organizational cultures that may influence how principals adopt digital technologies and utilize institutional information systems. Consequently, findings derived from secular educational settings cannot automatically be generalized to Islamic educational institutions, highlighting the need for context-specific empirical investigation.

The practical challenges experienced by Islamic educational institutions further reinforce the significance of this study. Many schools continue to encounter inadequate digital infrastructure, unstable internet connectivity, and limited technological facilities, which constrain effective EMIS implementation (Michel, 2026). Human resource limitations, particularly insufficient digital competence among school leaders and administrative staff, further reduce the effective utilization of digital technologies (Fahey & Köster, 2019; Rusdi et al., 2023). Additional challenges include system interoperability, data security, software usability, and institutional governance issues that frequently hinder the integration of digital information into strategic decision-making processes (Dhukaram et al., 2018; Christou et al., 2024; Ehren & Baxter, 2020; Kunisch, 2020). As a result, many Islamic educational institutions have yet to fully realize the potential of digital technologies in supporting evidence-based management.

Based on these theoretical and empirical considerations, this study addresses two specific research gaps. First, although digital literacy and EMIS have individually been shown to improve educational management, limited empirical evidence explains their combined contribution to principals' decision-making processes within a single analytical framework. Second, existing digital leadership research has not sufficiently contextualized digital capability within the ethical governance environment of Islamic educational institutions. By examining principals' digital literacy and EMIS knowledge simultaneously in Islamic schools, this study extends current digital leadership literature toward a more context-sensitive understanding of technology-enabled educational management.

Accordingly, this study aims to analyze the influence of principals' digital literacy and their knowledge of Education Management Information Systems (EMIS) on decision-making processes in Islamic educational institutions. Specifically, this study addresses the following research questions: (1) Does principals' digital literacy significantly influence decision-making processes in Islamic educational institutions? (2) Does principals' knowledge of Education Management Information Systems significantly influence decision-making processes in Islamic educational institutions? (3) Do principals' digital literacy and EMIS knowledge simultaneously influence decision-making processes in Islamic educational institutions? and (4) Does principals' digital literacy exert a more dominant influence on decision-making processes than EMIS knowledge?

This study contributes to the literature in three ways. First, it extends digital leadership research by examining the complementary influence of principals' digital literacy and EMIS

knowledge on educational decision-making rather than treating these constructs independently. Second, it contextualizes digital leadership within Islamic educational institutions by interpreting digital decision-making through the ethical governance principles that characterize Islamic schools, thereby enriching the development of value-based digital leadership literature. Third, the findings provide empirical evidence for policymakers and educational leaders in designing strategies to strengthen principals' digital competencies, optimize EMIS implementation, and improve evidence-based decision-making within Islamic educational institutions.

RESEARCH METHODOLOGY

Research Design

This study employed an explanatory sequential mixed-methods design, in which quantitative data were collected and analyzed during the first phase, followed by qualitative inquiry to explain and enrich the quantitative findings. The quantitative phase examined the influence of principals' digital literacy and their knowledge of Education Management Information Systems (EMIS) on decision-making processes in Islamic educational institutions using a cross-sectional survey. Subsequently, qualitative data were obtained through semi-structured interviews with selected principals to explore how digital literacy and EMIS knowledge were applied in actual decision-making practices, providing contextual explanations for the statistical results. The integration of quantitative and qualitative findings enabled a more comprehensive understanding of the factors influencing decision-making in Islamic educational institutions.

Participants

The study was conducted in Islamic educational institutions across Riau Province, Indonesia using an explanatory sequential mixed-methods design. The quantitative phase targeted school principals who were actively engaged in institutional management and decision-making. A purposive sampling technique was employed based on the following inclusion criteria: (1) currently serving as a principal of an Islamic educational institution, (2) having experience in utilizing digital technologies or the Education Management Information System (EMIS), and (3) being directly involved in institutional decision-making processes. A total of 178 principals participated in the survey. This sample size is considered adequate for multiple regression analysis and satisfies commonly accepted statistical requirements for explanatory research.

Following the quantitative phase, a qualitative phase was conducted to provide a deeper understanding of the statistical findings. Six school principals were purposively selected from the survey participants for semi-structured interviews. The interview participants represented diverse institutional characteristics, including differences in school level, geographical location, and levels of digital technology and EMIS utilization. This variation was intended to capture a broad range of experiences and perspectives regarding the implementation of digital literacy and EMIS in principals' decision-making processes. The qualitative findings were subsequently integrated with the quantitative results to explain and enrich the interpretation of the relationships identified in the statistical analysis.

Instrument and Data Collection

Data were collected through a structured questionnaire administered online. The instrument was developed based on established theoretical frameworks and prior empirical studies. It consists of three constructs: (1) Digital Literacy (X1): measured through indicators related to accessing, evaluating, and utilizing digital information, as well as applying digital tools in managerial

practices. (2) EMIS Knowledge (X2): measured through understanding of system functions, data management capability, system utilization, and interpretation of information outputs. (3) Decision-Making Processes (Y): measured through stages including problem identification, data analysis, evaluation of alternatives, decision implementation, and outcome evaluation.

All items were rated on a five-point Likert scale (1 = strongly disagree to 5 = strongly agree). To ensure measurement quality, the instrument underwent validity and reliability testing. Before conducting the main statistical analysis, the measurement instrument was first evaluated to ensure its validity and reliability. This step is essential to confirm that the questionnaire items accurately measure the intended constructs and produce consistent results. The validity test was performed using the Pearson Product-Moment correlation, while reliability was assessed using Cronbach's Alpha coefficient. The results of these tests are presented in the following tables.

Table 1. Validity Test Results

Variable	Item	r-count	r-table (0.147)	Decision	Cronbach's Alpha	Decision
Digital Literacy (X1)	15	0.702–0.768	0.147	Valid	0.912	Reliable
EMIS Knowledge (X2)	15	0.701–0.761	0.147	Valid	0.925	Reliable
Decision-Making (Y)	25	0.742–0.801	0.147	Valid	0.938	Reliable

All measurement items have r-count values greater than the r-table value (0.147), indicating that the instrument is valid. Furthermore, Cronbach's Alpha values for all variables exceed 0.70, demonstrating high reliability. Therefore, the instrument is appropriate for further statistical analysis.

Data Analysis

Data analysis was conducted using Statistical Package for the Social Sciences (SPSS). The analytical procedure followed standard quantitative research protocols. First, descriptive statistics were used to summarize respondent characteristics and variable distributions. Second, instrument testing was performed, including validity (Pearson correlation) and reliability (Cronbach's Alpha). Third, classical assumption tests were conducted to ensure the suitability of the regression model, including normality (Kolmogorov–Smirnov test), multicollinearity (Variance Inflation Factor and tolerance values), and heteroscedasticity (Glejser test).

To test the research hypotheses, multiple linear regression analysis was applied using the following model:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \epsilon$$

where Y represents decision-making processes, X_1 represents digital literacy, and X_2 represents EMIS knowledge.

Hypothesis testing was conducted using t-tests to examine the partial effects of each independent variable and an F-test to assess their simultaneous effect. The coefficient of determination (R^2) was used to evaluate the explanatory power of the model. All statistical tests were performed at a significance level of 0.05.

Ethical Considerations

Participation in this study was voluntary. Respondents were informed about the purpose of the research, and confidentiality and anonymity were strictly maintained throughout the data collection and analysis process.

RESULT AND DISCUSSION

This study aims to examine the influence of principals' digital literacy and knowledge of Education Management Information Systems (EMIS) on decision-making processes in Islamic education institutions. The data were analyzed using descriptive statistics and multiple regression analysis.

Quantitative Finding

Descriptive statistics

Descriptive statistics were conducted to determine the general tendency of each variable, including digital literacy, EMIS knowledge, and decision-making processes. The results are presented in Table 2.

Table 1. Descriptive Statistics

Variable	Mean (M)	Std. Deviation (SD)	Interpretation
Digital Literacy	4.12	0.53	High
EMIS Knowledge	3.98	0.61	Moderate–High
Decision-Making Processes	4.05	0.55	High

Table 2 shows that the level of principals' digital literacy is categorized as high ($M = 4.12$, $SD = 0.53$). This indicates that most principals possess adequate skills in using digital technologies, including accessing, evaluating, and utilizing digital information for educational purposes. High digital literacy suggests that principals are capable of adapting to technological advancements and integrating digital tools into their administrative practices.

Meanwhile, EMIS knowledge is also relatively high ($M = 3.98$, $SD = 0.61$), although slightly lower than digital literacy. This finding implies that principals generally have a good understanding of Education Management Information Systems, including data input, processing, and interpretation. However, the slightly lower mean indicates that there is still room for improvement, particularly in maximizing the use of EMIS for strategic decision-making.

Furthermore, decision-making processes among principals are categorized as high ($M = 4.05$, $SD = 0.55$). This suggests that principals demonstrate effective decision-making practices, including problem identification, data consideration, and evaluation of alternatives. The relatively high mean score reflects that decision-making processes in Islamic education institutions are generally well-structured and informed.

Overall, these findings indicate that the three variables are at favorable levels, providing a strong foundation for further analysis of the relationships among them.

The Effect of Digital Literacy on Decision-Making Processes

In the context of rapidly evolving digital environments, principals' digital literacy is considered a critical factor in enhancing the quality of decision-making processes. Digital literacy enables school leaders to effectively access, evaluate, and utilize information from various digital sources, thereby supporting more informed and timely decisions. This study, therefore, examines whether digital literacy significantly contributes to decision-making processes in Islamic education institutions. To test H1, a simple regression analysis was conducted to examine the effect of principals' digital literacy on decision-making processes.

Table 3. Regression Result for H1

Variable	β	t-value	Sig. (p-value)
Digital Literacy	0.45	6.78	0.000
R^2	0.38		

The results indicate that digital literacy has a significant positive effect on decision-making processes ($\beta = 0.45$, $p < 0.000$). The R^2 value of 0.38 shows that 38% of the variance in decision-making processes is explained by digital literacy alone. This suggests that principals with higher digital literacy tend to make more effective and informed decisions. Therefore, H1 is supported.

The Effect of EMIS Knowledge on Decision-Making Processes

The utilization of Education Management Information Systems (EMIS) has become increasingly important in supporting data-driven decision-making in educational institutions. Principals who possess adequate knowledge of EMIS are better positioned to interpret data, monitor institutional performance, and formulate strategic decisions. Accordingly, this study investigates the extent to which principals' EMIS knowledge influences decision-making processes. To test H2, a simple regression analysis was performed to assess the influence of EMIS knowledge on decision-making processes

Table 4. Regression Result for H2

Variable	β	t-value	Sig. (p-value)
EMIS Knowledge	0.32	4.95	0.001
R²	0.27		

The findings show that EMIS knowledge significantly influences decision-making processes ($\beta = 0.32$, $p < 0.01$). The R^2 value of 0.27 indicates that 27% of the variance in decision-making processes is explained by EMIS knowledge. This implies that principals who have better understanding of EMIS are more capable of utilizing data for decision-making. Thus, H2 is supported.

The Simultaneous Effect of Digital Literacy and EMIS Knowledge

While digital literacy and EMIS knowledge independently contribute to decision-making, their combined effect may provide a more comprehensive explanation of how principals make effective decisions. The integration of digital competencies and system-based knowledge is expected to strengthen principals' ability to utilize data and technology in a holistic manner. Therefore, this study examines the simultaneous influence of digital literacy and EMIS knowledge on decision-making processes. To test H3, multiple regression analysis was conducted to examine the simultaneous influence of digital literacy and EMIS knowledge on decision-making processes. To test H3, multiple regression analysis was conducted to examine the simultaneous influence of digital literacy and EMIS knowledge on decision-making processes.

Table 5. Multiple Regression Result

Variable	β	t-value	Sig. (p-value)
Digital Literacy	0.45	6.78	0.000
EMIS Knowledge	0.32	4.95	0.001
R²	0.52		
F-value	56.78		0

The findings show that EMIS knowledge significantly influences decision-making processes ($\beta = 0.32$, $p < 0.01$). The R^2 value of 0.27 indicates that 27% of the variance in decision-making processes is explained by EMIS knowledge. This implies that principals who have better understanding of EMIS are more capable of utilizing data for decision-making. Thus, H2 is supported

Dominant Influence

Understanding which variable exerts a more dominant influence is essential for identifying key priorities in leadership development. Although both digital literacy and EMIS knowledge are important, it is necessary to determine which factor plays a more substantial role in shaping decision-making processes. Thus, this study compares the relative influence of digital literacy and EMIS knowledge to identify the dominant predictor. To test H4, the standardized beta coefficients from the multiple regression model were compared.

Table 6. Comparison of Standardized Coefficients

Variable	Standardized β	Rank
Digital Literacy	0.45	1
EMIS Knowledge	0.32	2

Table 5 shows that digital literacy has a higher standardized coefficient ($\beta = 0.45$) compared to EMIS knowledge ($\beta = 0.32$). This indicates that digital literacy exerts a more dominant influence on decision-making processes. The finding suggests that while EMIS knowledge is important, broader digital competencies play a more critical role in shaping effective decision-making. Hence, H4 is supported.

Qualitative Findings

To explain the quantitative findings, semi-structured interviews were conducted with six principals, coded as P1 to P6. The interview data were analyzed thematically and used to explain the statistical relationships identified in the quantitative phase.

Theme 1. Digital Literacy Strengthens Evidence-Based Decision-Making

The quantitative analysis showed that digital literacy significantly influenced principals' decision-making processes ($\beta = 0.45$, $p < 0.001$) and emerged as the strongest predictor. The interview findings confirmed this result. P1 explained that digital literacy enabled principals to compare information from multiple digital sources before making decisions.

“Before making a policy, I always compare data from several digital sources, not only from school reports. This helps me avoid subjective decisions.” (P1)

Similarly, P2 stated that digital literacy improves the quality of information evaluation.

“Digital literacy is not simply operating technology. It means understanding whether the information is valid and relevant before using it for school decisions.” (P2)

P5 added that digital communication platforms accelerated coordination among teachers and administrative staff.

“Using digital platforms allows us to coordinate more quickly, especially when urgent decisions need to be made.” (P5)

These statements explain why digital literacy demonstrated the strongest statistical influence on decision-making.

Theme 2. EMIS Improves Data Accuracy for Institutional Decisions

The regression analysis indicated that EMIS knowledge significantly influenced decision-making ($\beta = 0.32$, $p = 0.001$). Interview participants explained that EMIS provides accurate institutional information that supports planning and evaluation. P3 emphasized the importance of EMIS in school planning.

“Student enrollment, teacher workload, and financial information are already available in EMIS. This makes annual planning much easier.” (P3)

P4 explained that EMIS improves accountability because institutional decisions can be supported by documented data.

“When supervisors ask for evidence, everything is already recorded in EMIS, so our decisions become more transparent.” (P4)

However, P6 acknowledged that EMIS utilization still depends on users’ competence.

“The system already provides complete information, but principals still need digital skills to interpret the data correctly.” (P6)

These findings help explain why EMIS knowledge contributes significantly to decision-making, although its effect is smaller than that of digital literacy.

Theme 3. Effective Decisions Require the Integration of Digital Literacy and EMIS

The multiple regression analysis demonstrated that digital literacy and EMIS knowledge jointly explained 52% of the variance in decision-making processes ($R^2 = 0.52$). The interview findings consistently supported this result. P2 explained the complementary relationship between the two competencies.

“Digital literacy helps us analyze information critically, while EMIS provides the institutional data. Both are needed before making important decisions.” (P2)

P4 shared a similar perspective.

“Without EMIS, we lack accurate data. Without digital literacy, we may not interpret the information correctly. They complement each other.” (P4)

P6 further emphasized that the integration of digital competence and EMIS has improved institutional management.

“Most strategic decisions are now based on EMIS reports, but principals still need digital competence to understand trends and determine the best policy.” (P6)

Overall, the interview findings demonstrate that digital literacy functions as the broader competency supporting information analysis and critical thinking, whereas EMIS serves as the institutional source of reliable data. The integration of these two capabilities enables principals to make more systematic, transparent, and evidence-based decisions in Islamic educational institutions.

Integration of Quantitative and Qualitative Findings

The qualitative findings reinforce the quantitative results in several ways. First, P1, P2, and P5 explained how digital literacy enhances principals’ ability to evaluate information critically and respond quickly to institutional challenges, supporting the finding that digital literacy is the strongest predictor of decision-making ($\beta = 0.45$). Second, P3, P4, and P6 highlighted the importance of EMIS as a reliable institutional database for planning, monitoring, and accountability, explaining its significant positive effect ($\beta = 0.32$). Finally, all six participants emphasized that effective decision-making depends on integrating digital competence with EMIS utilization, which is consistent with the multiple regression results showing that both variables jointly explain a substantial proportion of decision-making effectiveness ($R^2 = 0.52$).

The findings of this study confirm that digital literacy and EMIS knowledge significantly influence principals’ decision-making processes in Islamic educational institutions. These results reinforce and extend existing literature by demonstrating that decision-making effectiveness is

shaped not only by leadership styles but also by the integration of digital competencies and information systems.

A key contribution of this study lies in its alignment with the work of Qu (2024), which emphasizes the integrated effectiveness of information technology in educational management. Zhang argues that the application of information technology enhances communication, coordination, and teaching management efficiency. Although the study does not directly examine decision-making, its implications are highly relevant: improved communication systems and streamlined management processes create a more informed and responsive decision-making environment (Veseli et al., 2025). In this context, the present findings provide empirical support by showing that when principals possess strong digital literacy and EMIS knowledge, the indirect benefits identified by Fattah (2024) translated into more effective and data-driven decisions.

Furthermore, the significant influence of digital literacy supports the theoretical perspective proposed by Alojail et al. (2023), who conceptualize digital literacy as a foundational competency in navigating digital transformation. Digital literacy enables principals to critically evaluate information, utilize digital tools, and respond adaptively to institutional challenges. This aligns with the present findings, where digitally literate principals demonstrate a greater capacity for evidence-based decision-making. In Islamic educational institutions, where administrative and pedagogical decisions often intersect with value-based considerations, the ability to interpret digital information becomes even more crucial.

The role of EMIS knowledge in enhancing decision-making is also consistent with system-based perspectives, particularly the model proposed by Li & Ding (2024), which highlights system quality, information quality, and system intelligence as key determinants of decision satisfaction. EMIS provides structured and reliable data that supports planning, monitoring, and evaluation processes. The findings suggest that principals who understand how to effectively operate EMIS can transform institutional data into strategic insights, thereby improving decision accuracy and accountability.

In addition, the findings resonate with broader discussions on ICT integration in educational administration. Studies by Krein (2023) highlight that principals recognize the importance of ICT in managing school operations, particularly in areas such as assessment and reporting. Similarly, research by Banoğlu et al., (2025) emphasized that informatization in educational management enhances administrative efficiency and supports intelligent decision-making processes. Although these studies do not explicitly focus on decision-making outcomes, they provide indirect support for the argument that technology integration creates enabling conditions for improved leadership practices.

Moreover, the findings can be interpreted through the lens of digital performance theory, as discussed by Pham et al., (2025), who argue that digital competence is influenced by both individual capabilities and organizational contexts. This study extends that perspective by demonstrating that digital literacy functions as a foundational capability, while EMIS knowledge represents a more specialized, system-oriented competence. The stronger influence of digital literacy observed in this study suggests that without fundamental digital skills, the effective use of advanced systems such as EMIS becomes limited.

From a leadership perspective, this study also complements research by Yip et al., (2025), which emphasizes transformational leadership in madrasah contexts. While their study focuses on motivational and inspirational aspects of leadership, the present research introduces a technological dimension, suggesting that effective leadership in Islamic educational institutions must integrate both transformational qualities and digital competencies.

Additionally, the findings align with emerging discussions on data-driven decision-making and digital leadership. For instance, studies on ICT-based data systems highlight that leadership plays a critical role in fostering data use practices within educational institutions. Principals who are digitally competent are more likely to create environments that support data-driven cultures, thereby improving institutional performance.

Theoretically, these findings can also be interpreted using the constructivist framework of Lev Vygotsky, where tools and technologies act as mediational instruments in cognitive processes. Digital platforms and EMIS function as tools that shape how principals construct knowledge, interpret information, and make decisions. Through continuous interaction with these systems, principals develop higher-order thinking skills that enhance their strategic decision-making capabilities.

Importantly, this study addresses a notable gap identified in the literature. Many prior studies; such as those by Barnes et al. (2025) highlight the lack of comprehensive research linking digital leadership, system knowledge, and decision-making processes, particularly in specific institutional contexts. By focusing on Islamic educational institutions, this study provides a contextualized understanding that integrates technological, managerial, and cultural dimensions.

The findings demonstrate that effective decision-making in Islamic educational institutions is a product of the interaction between digital literacy and EMIS knowledge. Digital literacy provides the cognitive and analytical foundation, while EMIS knowledge enables the practical application of data in decision-making processes. Consistent with Amemasor et al., (2025), the integration of information technology not only enhances management efficiency but also indirectly strengthens decision-making through improved communication and organizational effectiveness. Therefore, developing both competencies is essential for advancing technology-based educational leadership in the digital era.

CONCLUSION

This study confirms that principals' digital literacy and knowledge of Education Management Information Systems (EMIS) play a critical role in shaping effective decision-making processes in Islamic education institutions. The findings highlight that decision-making in contemporary educational settings is no longer solely dependent on administrative experience but increasingly influenced by the ability to integrate digital competencies with data-based systems. This study contributes to the existing body of knowledge by demonstrating a more comprehensive model of educational leadership that combines digital literacy and EMIS knowledge as key determinants of decision quality.

Theoretically, this research advances the understanding of data-informed leadership by positioning digital literacy as a foundational competence that enhances the utilization of EMIS in decision-making. Practically, it underscores the need for capacity-building programs that strengthen both digital skills and system-based knowledge among school leaders. Future studies are recommended to explore additional variables, such as organizational culture or instructional leadership, and to apply more advanced analytical approaches to further enrich the model of decision-making in educational contexts.

DECLARATION OF AI AND AI ASSISTED TECHNOLOGIES IN THE WRITING PROCESS

In the preparation of this manuscript, the author utilized several AI and AI-assisted technologies to support the writing process. Specifically, Grammarly was used for grammar

checking, language refinement, and improving clarity of expression. Scholar GPT was employed to assist in understanding academic concepts, generating insights, and structuring scholarly arguments. Additionally, Consensus AI was used to explore relevant research findings and support evidence-based discussion.

ACKNOWLEDGEMENT

The author would like to express sincere gratitude to all those who have contributed to the completion of this work. Special appreciation is extended to academic supervisors and lecturers for their valuable guidance, constructive feedback, and continuous support throughout the research and writing process. The author is also deeply thankful to colleagues and peers for their encouragement, insightful discussions, and moral support. Appreciation is further extended to all respondents and participants who have willingly contributed their time and information, making this study possible.

AUTHORS' CONTRIBUTION

Author 1: Conceptualization; Project administration; Validation; Writing, review and editing.

Author 2: Conceptualization; Data curation; Investigation.

Author 3: Data curation; Investigation.

Author 4: Investigation; Resources; Validation; Visualization; Writing – review and editing.

DECLARATION OF COMPETING INTEREST

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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