

Creation, Maintenance, and Use of Management Information Systems in Educational Institutions: A Literature Review

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Abstract

Digital transformation has prompted educational institutions to optimize technology-based governance through the implementation of Management Information Systems (MIS). Although MIS implementation has been extensively studied, discussions integrating the creation, maintenance, and use of MIS as a single information management cycle remain relatively limited. This study aims to analyze the processes of creation, maintenance, and use of MIS in educational institutions and to examine their implications for educational governance, particularly from the perspective of Islamic education. The study employs a qualitative approach using the library research method, with data obtained from books, national and international journal articles, conference proceedings, and relevant scientific documents, prioritizing literature published between 2020 and 2024. Data analysis was conducted through identification, selection, evaluation, content analysis, and descriptive literature synthesis. The findings indicate that the creation of an MIS begins with needs analysis, system design, development, implementation, and continuous evaluation, while maintenance includes software updates, enhanced data security, performance optimization, and adaptation to technological and organizational needs. The use of MIS has been shown to improve administrative efficiency, support data-driven decision-making, strengthen transparency and accountability, and enhance the quality of educational services. From an Islamic education perspective, MIS implementation aligns with the values of trustworthiness (*amanah*), justice (*adl*), professionalism (*itqan*), and the public good (*maslahah*), supporting effective, transparent, and service-oriented governance of educational institutions. Therefore, MIS development must be carried out on an ongoing basis through strengthened infrastructure, enhanced human resource competencies, and the integration of technology and organizational values to support continuous improvement in educational quality.

Keywords: Educational Institutions, Information Technology, Management Information Systems.

1. Introduction

Digital transformation has become one of the strategic priorities in the development of education systems across various countries. Advances in information and communication technology are driving educational institutions to shift their organizational governance from conventional systems toward integrated, adaptive, and data-driven systems. Digitalization not only affects the learning process but also encompasses academic administration, human resource management, financial management, student services, and even the decision-making processes of educational institution leaders. Consequently, the implementation of a Management Information System (MIS) has become an integral part of efforts to improve the quality of educational governance in the digital age (Sari et al., 2023; Sukorini et al., 2024).

A Management Information System is a system that integrates people, procedures, data, software, and information technology to produce accurate, relevant, and timely information as a basis for organizational decision-making. In the context of education, an MIS serves to manage a range of



academic and non-academic information, thereby making administrative processes more effective, efficient, transparent, and accountable (Hasanuddin et al., 2023). The existence of an Educational Management Information System (EMIS) enables all activities of educational institutions to be systematically documented, thereby supporting the creation of high-quality educational governance.

This global trend toward digital, data-driven governance is clearly reflected in the Indonesian context, where the development of digitalization in education further reinforces the urgency of implementing an EMIS at every level of education. Various applications, such as academic information systems, e-Rapor, the Education Management Information System (EMIS), the Learning Management System (LMS), and various digital administration platforms, have become an integral part of the delivery of education. The implementation of these systems facilitates the management of student data, the administration of teachers and educational staff, the preparation of reports, the monitoring of academic activities, and the provision of information to stakeholders in a swift and accurate manner (Rahman & Prabowo, 2025). However, the effectiveness of its implementation still depends heavily on the quality of the planning, development, maintenance, and use of the system by each educational institution (Ma'arif, 2023).

Various studies show that the implementation of a Management Information System can improve administrative efficiency, speed up access to information, enhance the quality of educational services, and support data-driven decision-making (Firmansyah et al., 2024; Prayoga et al., 2023; Rismawati et al., 2024; Sari et al., 2023). As well as boosting organizational productivity, the MIS also contributes to greater accountability and transparency in the management of educational institutions. With accurate and integrated information at their disposal, the leadership of educational institutions can carry out planning, monitoring, evaluation, and organizational development more effectively.

Nevertheless, the implementation of the MIS in educational institutions still faces various challenges. Gaps in technological infrastructure, low digital literacy among staff, budgetary constraints, a lack of integration between systems, and resistance to change remain obstacles to the optimal utilization of MIS. Furthermore, the majority of MIS implementations remain focused on the digitization of administrative processes without being accompanied by a strategy for sustainable system maintenance or the use of information as a basis for organizational decision-making. This situation means that many information systems are not yet able to provide optimal benefits for improving the quality of educational management.

Although various studies have examined MIS implementation in educational institutions, the majority still focus on technology implementation, administrative effectiveness, or service quality in isolation, with limited attention to creation, maintenance, and utilization as a single management cycle, and even less connection to educational governance and Islamic educational values. Building on this gap, this study offers a conceptual contribution in the form of an integrative framework regarding the life cycle of MIS in educational institutions, encompassing creation, maintenance, and sustainable use, and synthesizing empirical findings to explain the interrelationships between these stages and their implications for data-driven decision-making, service quality, and institutional governance. This study further broadens the perspective by integrating Islamic educational values, namely *amanah*, *'adl*, *itqan*, and *maslahah*, as an ethical foundation for MIS utilization in Islamic educational institutions.

2. Literature Review

2.1. Management Information System

A Management Information System (MIS) is a system that integrates people, technology, procedures, databases, and communication networks to produce accurate, relevant, and timely information as a basis for decision-making. When applied specifically to the education sector, this is commonly referred to as an Education Management Information System (EMIS), which manages academic and non-academic information so that all activities of educational institutions can be systematically documented. In educational institutions, MIS serves to manage various academic and administrative data, thereby enhancing the effectiveness of planning, implementation, monitoring, and evaluation of educational provision. The implementation of MIS also supports transparency, operational efficiency, and improved quality of educational services through the provision of integrated information for all stakeholders (Laudon & Laudon, 2004).

2.2. Creation and Maintenance of Management Information Systems

The creation of an MIS is a systematic process of designing and developing a system based on organizational needs, while maintenance involves ongoing updates, security enhancements, and periodic evaluation to keep the system operating optimally. In educational institutions, this creation and maintenance cycle is a crucial factor, as changes in policy, curriculum, and administrative requirements demand a system that is adaptable, reliable, and sustainable (Foster & Towle Jr, 2021). The specific stages involved in system creation and maintenance are elaborated further in the Results and Discussion section.

2.3. The Use of Management Information Systems in Educational Institutions

The use of MIS in educational institutions aims to support the effective and efficient management of data relating to students, teaching staff, the curriculum, finances, facilities and infrastructure, as well as various other administrative activities. The utilization of MIS enables the rapid and accurate provision of information, thereby assisting management in planning, monitoring, evaluation and data-driven decision-making. The success of MIS implementation is influenced by the quality of the system, the quality of the information, user competence, management support, and the readiness of the technological infrastructure. The more optimally the MIS is utilized, the greater its contribution to improving the quality of services and the governance of educational institutions (Delone & McLean, 2003).

3. Methods

This study employs a qualitative approach using the library research method. This method was chosen because the study aims to examine, understand and synthesize various concepts, theories and the findings of previous research concerning the creation, maintenance and use of Management Information Systems (MIS) in educational institutions. A literature review enables the researcher to gain a comprehensive understanding through the analysis of various relevant academic sources without conducting direct data collection in the field.

The research data consists of secondary data obtained from books, national and international journal articles, conference proceedings, and other academic documents relating to Management Information Systems and educational management. The literature search was conducted using various scientific databases, such as Google Scholar, Scopus, ERIC, ScienceDirect, SpringerLink, and the Directory of Open Access Journals (DOAJ), using the keywords 'Management Information System',

'Education Management Information System', 'School Management Information System', 'Sistem Informasi Manajemen', and 'Educational Institutions'. The literature used was selected based on its relevance to the research focus, the credibility of the sources, and the recency of the publications, with priority given to articles published between 2020 and 2024. However, some classic works were still utilised as a theoretical foundation where they had strong relevance to the research topic.

Data analysis was conducted descriptively through the stages of identification, selection, evaluation, content analysis, and literature synthesis. The identification stage involved gathering various references related to the research topic. Subsequently, a selection process was carried out to determine the most relevant literature based on theme, purpose, and publication quality. During the evaluation stage, each piece of literature was critically reviewed to assess its validity, contribution, and relevance to the research focus. Content analysis was conducted to identify key concepts, research findings, and patterns emerging across the literature. The results of the analysis are then synthesized narratively by comparing the similarities and differences in previous research findings, thereby providing a comprehensive understanding of the creation, maintenance and use of Management Information Systems in educational institutions, whilst also identifying research gaps that require further study.

4. Results and Discussion

4.1. The Concept of Management Information Systems

A Management Information System (MIS) is an integrated system that combines people, information technology, work procedures, software, hardware and databases to produce high-quality information as a basis for organizational decision-making. According to Hany and Lira (2024), An MIS not only functions as a data-processing tool, but also as a system that supports the processes of planning, organizing, implementing and controlling within an organization by providing accurate, relevant and timely information. In line with this view, Armah and Firdaus (2024) explains that the development of Management Information Systems (MIS) in the digital age has shifted the organization's focus from conventional data management to strategic information management, thereby enhancing the organization's operational effectiveness and efficiency. Consequently, the concept of MIS is no longer limited to the use of information technology, but encompasses the entire process of information management that supports the achievement of organizational objectives.

From a managerial perspective, MIS serves primarily as a provider of information that supports the decision-making process at all levels of management. Anugrah et al. (2024) states that the information generated by the management information system must be accurate, relevant, complete, consistent and available in a timely manner in order to serve as a basis for the formulation of organizational policy. This information is utilized by management for planning, control, coordination and evaluation of the organization's various activities. Putri et al. (2024) add that the effective implementation of an MIS can improve the effectiveness of inter-departmental coordination, speed up the flow of information, reduce administrative errors, and support more objective, data-driven decision-making. Therefore, the quality of the information produced by the MIS is a key indicator of the success of an information system's implementation within an organization.

Advances in digital technology have helped to expand the concept of MIS through the integration of various modern technologies, such as cloud computing, big data analytics, artificial intelligence (AI) and the Internet of Things (IoT). According to Armah and Firdaus (2024), The integration of this technology enables organizations to obtain information in real time, allowing monitoring and evaluation processes to be carried out more quickly and accurately. This is reinforced by Widiawati et

al. (2023) which states that modern MIS not only functions as an administrative system, but also serves as a strategic tool for fostering innovation, enhancing organizational competitiveness, and supporting digital transformation. With increasingly sophisticated data analysis capabilities, MIS can help organizations identify opportunities, predict risks, and formulate strategies that are more adaptable to changes in the environment.

In terms of its constituent components, an MIS comprises hardware, software, databases, procedures, communication networks and human resources (brainware), all of which interact with one another to generate information. Marlina and Nugraha (2024a) explains that the successful implementation of an MIS is not only determined by the sophistication of the technology used, but is also influenced by user competence, data quality, and management support for information system development. If any one of these components fails to function optimally, the quality of the information produced will decline, which may affect the effectiveness of the organization's decision-making. Therefore, the implementation of an MIS requires a balanced integration of technological, human and organizational governance aspects.

In the context of educational institutions, an MIS plays a strategic role in supporting effective, data-driven educational governance. According to Shobri (2024) maintenance of Management Information Systems including the data academic, administrative, financial and human resources matters, so that services provided to students become faster and more transparent. Furthermore, Efendy (2024) and Sebe (2023) states that the MIS facilitates the work of educational institution leaders in obtaining accurate information as a basis for policy formulation, performance evaluation and strategic decision-making. Consequently, the implementation of the MIS not only improves the operational efficiency of educational institutions, but also strengthens the quality of institutional governance in meeting the demands of digital transformation.

4.2. The Development of a Management Information System

The analysis for the creation of a Management Information System (MIS) is a systematic process for designing, developing and implementing a system capable of producing accurate, relevant and timely information to support the organization's operational processes and decision-making. The initial stage of MIS creation begins with the identification of the organization's needs, namely analyzing problems, objectives, users' information requirements and existing business processes. This analysis aims to ensure that the system built is truly capable of meeting the organization's needs, eliminating duplication of work, improving process efficiency, and supporting the achievement of strategic objectives. Failure at the requirements analysis stage will result in a system that does not meet user needs, thereby leading to a low level of system utilization (Hasanuddin et al., 2023).

The next stage is system design, which encompasses the development of the system architecture, database design, user interface, process flows and information security mechanisms. At this stage, all the requirements that have been identified are translated into a technical design so that they can be implemented by the system developers. Good design must take into account integration between different parts of the organization, usability, flexibility of development, and the system's ability to produce high-quality information. The application of approaches such as the System Development Life Cycle (SDLC) remains a widely used method as it provides a structured set of stages ranging from planning, analysis, design and implementation through to system maintenance.

Once the design process is complete, the system is implemented through coding, testing, data migration, and user training. Implementation focuses not only on technical aspects but also encompasses change management to ensure users can adapt to the new system. At this stage, various tests are carried out, such as functional testing, usability testing, and software quality testing, to ensure

that all system functions operate in accordance with the specifications. Implementation accompanied by user training has been shown to enhance the effectiveness of system usage whilst minimizing resistance to technological change.

The next stage is system evaluation and maintenance. Evaluations are carried out periodically to measure system performance based on effectiveness, efficiency, information quality, data security and user satisfaction. The results of these evaluations form the basis for the organization to refine features, enhance security, and adapt the system to changing business needs. Maintenance also encompasses software updates, bug fixing, performance optimization, and integration with new technologies to ensure the MIS remains relevant to the organization's development and digital transformation.

Conceptually, the creation of a Management Information System does not merely result in an application, but builds an information ecosystem that integrates people, procedures, data, hardware, software and communication networks into a single entity. This integration enables organizations to obtain information that is timely, accurate and reliable, thereby supporting strategic decision-making, improving coordination between work units, accelerating service delivery and creating a competitive advantage. Consequently, the success of a MIS is largely determined by the quality of the requirements analysis, comprehensive system design, proper implementation, and continuous evaluation as part of the process of ongoing system improvement.

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4.4. The Use of MIS in Educational Institutions

The use of Management Information Systems (MIS) in educational institutions has become an essential part of supporting more effective and efficient organizational management. MIS not only serves to digitize academic administration, human resources, finance, and facilities and infrastructure, but is also capable of integrating various data sets into a single system, thereby simplifying information management, reducing administrative errors, and improving coordination between work units.

Table 1. Results of the Thematic Analysis of the Use of MIS in Educational Institutions

Theme	Focus of the Analysis	Summary of Research Findings	References
Theme 1. Digitalization of Education Administration	The use of the Management Information System (MIS) in the management of academic administration, human resources, finance, and facilities and infrastructure.	The majority of studies show that the MIS is capable of integrating various administrative activities, thereby making the processes of recording, storing, retrieving and reporting data faster, more accurate and more efficient than manual systems.	Handayani et al., 2022; Nabila et al., 2024; Nurfa, 2024; Pramungkas, 2021; Prayoga et al., 2023
Theme 2. Data-Driven Decision-Making	The use of information generated by the IMS as a basis for decision-making.	The MIS generates accurate, comprehensive and real-time information, thereby assisting headteachers and university leaders in formulating policies, conducting evaluations, drawing up work programs and allocating resources more objectively.	Prayoga et al., 2023; Samsuri, 2021; Siregar, 2020; Sirojuddin et al., 2022
Theme 3. Improving the Quality of Education Services	The impact of the IMS on the quality of service provided to teachers, pupils, parents and educational staff.	The implementation of the MIS improves access to academic information, speeds up administrative services, improves communication between schools and parents, and increases the satisfaction of users of educational services.	Abdullah, 2020; Anshori et al., 2025; Firmansyah et al., 2024; Hasan & Arisyahidin, 2024; Marlina & Nugraha, 2024b; Purwaningsih, 2022; Sonia, 2020
Theme 4. Transparency and Accountability in Governance	The contribution of the IMS to the governance of educational organizations.	The MIS enhances transparency by providing systematically documented data, thereby facilitating monitoring, evaluation, auditing and accountability to various stakeholders.	Khumaidi & Mursiyah, 2024; Shobri, 2024; Solihah, 2019

Having reviewed various studies, it is evident that the use of Management Information Systems (MIS) in educational institutions has evolved into a key component in supporting effective organizational governance. The implementation of MIS is not only focused on the digitization of administration, but also encompasses integrated information management to support academic processes, administration, services and decision-making. This indicates that MIS has transformed from merely an administrative support tool into a system that plays a role in enhancing the effectiveness of educational institution management.

The findings also show that the use of MIS has a positive impact on improving the quality of educational institution management. Data integration enables information to be presented more quickly, accurately and accessibly, thereby supporting coordination between work units, strengthening transparency in organizational management, and improving the quality of services provided to learners, educators, educational staff and parents. Furthermore, the availability of systematically documented information facilitates monitoring and evaluation processes, allowing decision-making to be carried out more objectively and on a data-driven basis.

Overall, these findings indicate that the effectiveness of MIS usage is influenced not only by the implementation of information technology but also by the educational institution's ability to integrate the system into all management processes. Consequently, the optimization of MIS usage must be supported by organizational policies, the development of human resource competencies, and leadership commitment to ensure that the information system can deliver maximum benefits for improving the quality of educational management and services.

4.5. The Integration of Management Information Systems with Islamic Educational Values

The use of Management Information Systems (MIS) in educational institutions not only serves as a technological tool to enhance the effectiveness of organizational management, but can also be analyzed from the perspective of Islamic educational values. Hasanuddin et al. (2023) explain that the development of MIS in the era of globalization is aimed at supporting a more systematic, effective and adaptive approach to educational governance in line with technological developments. In line with this, Shobri (2024) emphasizes that the implementation of MIS in Islamic educational institutions contributes to strengthening transparency and accountability in the delivery of education. Consequently, the implementation of MIS aligns with the principles of trustworthiness (*amanah*), justice (*adl*), professionalism (*itqān*), and the public good (*maṣlaḥah*), which form the ethical foundation of Islamic education.

Through an integrated information system, the management of academic, financial, personnel, and other administrative data can be carried out more effectively and efficiently. Marlina and Nugraha (2024b) explain that the use of an MIS is capable of improving the quality of educational services by providing information that is prompt, accurate, and easily accessible to all stakeholders. These findings are reinforced by Rismawati et al. (2024), who state that information systems play a role in improving the quality of educational services by enhancing administrative effectiveness, information transparency and service efficiency. Indeed, Abdullah (2020) found that the implementation of an Educational Management Information System contributes to increased parental satisfaction, as administrative services become better and more responsive. Thus, the implementation of an Education Management Information System (EMIS) not only provides benefits in technical and managerial aspects but also supports the realization of professional and service-oriented governance within educational institutions.

The principle of *Amanah* is one of the fundamental values in Islamic education, which requires every institution manager to carry out their duties honestly, responsibly, and trustworthily. In the context of educational institution management, trustworthiness is demonstrated through the accurate management of data on pupils, teaching staff, finances, and facilities and infrastructure, as well as by safeguarding the confidentiality of information in accordance with one's authority. Sonia (2020) explains that the implementation of the Education Management Information System (MISDIK) is capable of improving administrative order, facilitating data documentation, and producing more accurate information for institution managers. In line with this, Shobri (2024) states that MIS

strengthens transparency and accountability within Islamic educational institutions, as every administrative activity can be traced and accounted for systematically. This value is in accordance with the words of Allah the Almighty:

“Verily, Allah commands you to entrust the trust to those entitled to receive it, and when you judge between people, judge with justice...” (QS. An-Nisā’ [4]: 58).

This verse emphasizes that every form of organizational management, including the management of information within educational institutions, must be carried out with full responsibility, integrity and professionalism. Thus, the implementation of the MIS is not merely a means of digitizing administration, but also a medium for realizing the value of *amanah* in the governance of Islamic education.

In addition to *amanah*, the implementation of the MIS also reflects the principle of *‘adl* (justice). From an Islamic educational perspective, justice is realized through the provision of services, decision-making, and the management of resources in an objective manner without discrimination. Sirojuddin et al. (2022) explain that the MIS assists madrasah leaders in making decisions based on valid data, thereby reducing subjectivity in the policy-making process. The findings of Prayoga et al. (2023) also indicate that the effectiveness of the educational MIS is determined by its ability to provide accurate data as a basis for monitoring, evaluation and decision-making. Consequently, policies regarding academic, financial and administrative matters are no longer based on assumptions, but on systematically documented information. This situation provides equal opportunities for pupils, teachers and educational staff to receive fair services, whilst simultaneously strengthening the institution’s transparency and accountability.

The value of *itqān* which means working professionally, meticulously and to the highest standard is also reflected in the implementation of the MIS. Khumaidi and Mursiyah (2024) explain that the use of information and communication technology can improve the efficiency of school management through the digitization of administrative processes, thereby making work more systematic and effective. Furthermore, Rahman and Prabowo (2025) state that the optimization of a digital-based MIS improves the quality of learning services whilst strengthening the professionalism of teaching and non-teaching staff. This view is supported by Firmansyah et al. (2024), who found that the implementation of the MIS at MTs Negeri 1 Paser was able to improve the quality of educational management through more organized, faster and more accurate administration. This demonstrates that the use of information technology is not only intended to expedite administrative tasks but also serves as a tool for fostering a professional, disciplined and high-quality work culture, as taught in the concept of *itqān*.

The implementation of the MIS is also closely linked to the concept of *maṣlaḥah*, namely realizing benefits for all members of the educational institution. This concept positions every policy and innovation as a means to generate greater benefits for society. Marlina and Nugraha (2024b) explain that the use of the MIS improves the quality of educational services by facilitating access to information for pupils, teachers, educational staff and parents alike. In line with this, Rismawati et al. (2024) emphasize that information systems are capable of improving the quality of educational services through transparency of information, effective communication, and administrative efficiency. Anshori et al. (2025) even demonstrate that the implementation of the Educational Management Information System has a positive impact on the quality of administrative services for students. Consequently, the benefits of implementing an Education Management Information System (EMIS) are felt not only by institutional administrators but also by all stakeholders through faster, more accurate, transparent and

responsive services. This situation reflects the realization of the value of *maṣlaḥah* in the delivery of Islamic education, as technology is utilized to generate broader benefits for society.

Based on this discussion, the implementation of an Educational Management Information System in educational institutions is strongly aligned with the values of Islamic education. The application of the system not only enhances the effectiveness of organizational management but also serves as an instrument for realizing the principles of trust (*amanah*), justice (*‘adl*), professionalism (*itqān*), and the public good (*maṣlaḥah*) in educational governance. As explained by Hasanuddin et al. (2023), digital transformation in educational management forms part of the effort to build educational organizations that are adaptable to the changing times, whilst Rahman and Prabowo (2025) emphasize that the optimization of digital-based MIS is capable of sustainably improving the quality of educational services. Therefore, the integration of information technology and Islamic values forms a crucial foundation for realizing the governance of educational institutions that is transparent, accountable, professional, and oriented towards service and the common good.

4.6. Implications for the Management of Madrasahs

The findings of the study indicate that the implementation of a Management Information System (MIS) has significant implications for the management of madrasahs, particularly in achieving effective, efficient and data-driven governance. The integration of various academic, personnel, financial, and facilities and infrastructure data into a single system enables madrasah leaders to plan, organize, implement and evaluate programs in a more structured manner. The availability of accurate and well-documented data also supports the formulation of more targeted policies in line with the needs and circumstances of the madrasah.

The use of the MIS also improves the quality of administrative and academic services by streamlining work processes and speeding up the dissemination of information to teachers, educational staff, pupils and parents. Administrative tasks that were previously carried out manually can now be performed more systematically, thereby reducing the potential for recording errors, speeding up service processes, and improving coordination between work units. These developments contribute to the creation of a more productive working environment and educational services that are more responsive to the needs of the madrasah community.

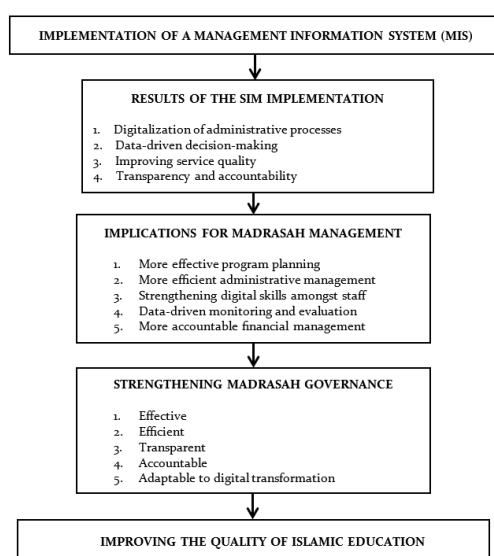


Figure 2. Conceptual Framework of the Implications of the Use of Management Information Systems for Madrasah Management

Source: Author's synthesis

Based on Figure 2, the implementation of a Management Information System (MIS) in madrasah management can be understood as a process that generates added value through the integration of organizational data and information. This integration forms the main foundation, as all information regarding pupils, teachers, educational staff, the curriculum, finances, and facilities and infrastructure is managed within a single, interconnected system. This arrangement reduces the occurrence of data duplication, inconsistencies in information, and delays in reporting, which have long been among the obstacles in educational administration. According to Laudon and Laudon (2022), an integrated information system enables organizations to transform operational data into valuable information for management processes, whilst the information system success model developed by DeLone and McLean (2003) explains that the quality of the system and the quality of the information will yield net benefits for the organization if utilized optimally.

This data integration subsequently has implications for improving the efficiency of madrasah administration. The digitization of various administrative processes such as the management of student data, staff records, finances, timetables, assessment, and school archives reduces reliance on manual record-keeping, which can lead to errors and duplication of documents. Digital data storage also speeds up the process of retrieving information, shortens service times, and improves coordination between work units, as each department uses the same data source. Research findings by Handayani et al. (2022), Nurfa (2024), Purwaningsih (2022), and Efendy (2024) indicate that the digitization of administration through the MIS is capable of improving operational efficiency and supporting the smooth running of educational administration.

A further implication relates to the strengthening of data-driven decision-making. The information generated by the MIS goes beyond a mere documentation function; it serves as the basis for madrasah heads to formulate work programs, set development priorities, allocate budgets, and evaluate the achievement of organizational objectives. Decisions based on accurate and documented information will reduce subjectivity whilst improving the accuracy of policies. These findings are consistent with research by Siregar (2020), Samsuri (2021), Sirojuddin et al. (2022), and Prayoga et al. (2023), which demonstrates that the use of the MIS enhances the quality of decision-making by providing information that is relevant, timely, and easily accessible to the leadership of educational institutions.

At the same time, the implementation of the MIS enhances transparency and accountability in madrasah governance. All digitally documented administrative activities form an audit trail that facilitates monitoring, evaluation, supervision and the preparation of accountability reports for various stakeholders. Transparency is realized not only through open access to information, but also through the availability of consistent, verifiable and easily traceable data when required during evaluation or audit processes. Consequently, the use of the MIS contributes to the application of good governance principles in madrasah management. These findings are supported by research by Shobri (2024), Khumaidi and Mursiyah (2024), and Armah and Firdaus (2024), which confirms that information systems are a vital tool for enhancing accountability and the effectiveness of governance in educational institutions.

Collectively, these four implications lead to an improvement in the quality of educational services. Administrative services become faster and more accurate, access to information for pupils and parents becomes easier, and coordination between the headteacher, teachers, and educational staff becomes more effective. Improvements in service quality are influenced not only by the use of technology but also by an organization's ability to utilize information as the basis for continuous quality improvement. Consequently, the benefits of implementing an MIS are systemic in nature, as they affect administrative processes, management, service delivery and the overall governance of the institution. Research

findings by Abdullah (2020), Hasan and Arisyahidin (2024), Firmansyah et al. (2024), Marlina and Nugraha (2024), and Rismawati et al. (2024) indicate that the use of the MIS contributes to increased user satisfaction with services and the effectiveness of educational institution management.

These analyses indicate that the successful implementation of MIS in madrasahs is not solely determined by the availability of hardware, software or information technology networks, but is also influenced by the organization's readiness to manage change. The digital competencies of teachers and educational staff, the commitment of the madrasah head, policy support, and the development of a data-driven work culture are key factors determining the sustainability of MIS utilization. Therefore, the implementation of MIS should be viewed as part of a strategy for transforming madrasah governance, rather than merely the digitization of administration. When technology, human resources and organizational policies work synergistically, MIS will provide broader benefits in enhancing the effectiveness of management, the quality of service and the standard of education in madrasahs on a sustainable basis.

This study makes theoretical and practical contributions that distinguish it from previous research. Theoretically, this study offers an integrative conceptual framework regarding the life cycle of a Management Information System (MIS) in educational institutions, linking the processes of creation, maintenance and utilization as an interconnected whole in supporting the effectiveness of educational governance. Unlike previous studies, which tended to examine these three aspects in isolation or focused solely on the implementation of MIS, this study demonstrates that the success of MIS is determined by the continuity of all stages of the cycle. Furthermore, this study expands the scope of Educational Management Information Systems research by integrating an Islamic educational perspective through the values of *amanah*, *'adl*, *itqān*, and *maṣlaḥah* as an ethical foundation for information management and decision-making in educational institutions. In practical terms, this study produces a conceptual framework that can serve as a reference for school heads, madrasah heads, higher education administrators, and policymakers in designing, developing, maintaining, and optimizing the sustainable use of EMIS. This framework supports the strengthening of data-driven governance, the improvement of the quality of educational services, transparency, accountability, and digital transformation that is aligned with organizational needs and the values of Islamic education.

5. Conclusion

Based on the results of the literature review, it can be concluded that a Management Information System (MIS) is a strategic tool for supporting the effective, efficient, transparent and data-driven governance of educational institutions. The success of MIS implementation is determined not only by the system creation process involving needs analysis, design, development and implementation but also by continuous maintenance through system updates, enhanced data security, evaluation and performance optimization. The use of MIS has been proven to improve administrative efficiency, strengthen data-driven decision-making, enhance the quality of educational services, and reinforce transparency and accountability in institutional management. From an Islamic education perspective, the implementation of the MIS is also in line with the values of *amanah*, *'adl*, *itqān*, and *maṣlaḥah*; thus, it functions not only as a means of administrative digitalization but also as an instrument for realizing professional, integrity-driven, and public-interest-oriented educational governance.

The findings of this study imply that the development of the MIS should be viewed as part of an educational institution's digital transformation strategy, rather than merely the implementation of information technology. The integration of the MIS, supported by competent human resources, leadership commitment, organizational policies, and a data-driven work culture, will result in more

efficient administrative management, more objective decision-making, and improved service quality for all stakeholders. Thus, the MIS plays a vital role in supporting the sustainable strengthening of school and madrasah governance.

Based on these findings, educational institutions are advised to continue developing the MIS in an integrated manner through improvements to technological infrastructure, strengthening data security, providing digital skills training for educators and educational staff, and conducting regular system evaluations to ensure it remains adaptable to evolving organizational needs. Future research is expected to conduct empirical studies across various levels of education to examine the impact of the creation, maintenance, and use of MIS on the effectiveness of governance, service quality, and educational standards, particularly within the context of Islamic educational institutions, where the adoption of new technologies such as artificial intelligence, big data analytics, and cloud computing warrants closer examination of how these tools can be developed and governed in ways that uphold the values of *amanah*, *‘adl*, *itqan*, and *maslahah* in the development of educational Management Information Systems.

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