

CHALLENGES AND OPPORTUNITIES OF MANAGEMENT INFORMATION SYSTEM (MIS) IMPLEMENTATION IN ISLAMIC EDUCATION INSTITUTIONS

Muh. Bahrul Mu'min¹, Mulyawan S. Nugraha²

¹ Magister Manajemen Pendidikan Islam, UIN Sunan Gunung Djati Bandung, Indonesia

² Magister Manajemen Pendidikan Islam, UIN Sunan Gunung Djati Bandung, Indonesia

Email : bahroolm23@gmail.com¹, mulyawan@uinsgd.ac.id²

Abstract :

The implementation of Management Information Systems (MIS) in Islamic educational institutions serves as a crucial strategy to enhance administrative efficiency, transparency, and the quality of educational services. However, this implementation process faces various challenges, including limited human resources, technological infrastructure, and resistance to change. This study aims to identify the challenges and opportunities in implementing MIS in Islamic educational institutions through a qualitative approach based on literature studies. Data were collected from various journal articles, books, and relevant official documents. The findings reveal that despite certain challenges, significant opportunities arise from government support, increasingly affordable technology, and the demand for modernizing educational management. This study provides recommendations to strengthen human resource capacity, expand infrastructure, and integrate MIS into the strategic policies of Islamic educational institutions. These findings are expected to assist policymakers and practitioners in optimizing MIS implementation to enhance the competitiveness of Islamic educational institutions.

Keywords : Management Information System, Challenges, Opportunities, education

Abstrak :

Abstrak Implementasi Sistem Informasi Manajemen (MIS) di lembaga pendidikan Islam menjadi strategi penting dalam meningkatkan efisiensi administrasi, transparansi, dan kualitas layanan pendidikan. Namun, proses implementasi ini dihadapkan pada berbagai tantangan, termasuk keterbatasan sumber daya manusia, infrastruktur teknologi, dan resistensi terhadap perubahan. Penelitian ini bertujuan untuk mengidentifikasi tantangan dan peluang implementasi MIS di lembaga pendidikan Islam melalui pendekatan kualitatif berbasis studi literatur. Data dikumpulkan dari berbagai artikel jurnal, buku, dan dokumen resmi yang relevan. Hasil penelitian menunjukkan bahwa meskipun terdapat beberapa tantangan, peluang besar muncul dari dukungan pemerintah, ketersediaan teknologi yang semakin terjangkau dan kebutuhan akan modernisasi manajemen pendidikan. Penelitian ini memberikan rekomendasi untuk memperkuat kapasitas SDM, memperluas infrastruktur, dan mengintegrasikan MIS ke dalam kebijakan strategis lembaga pendidikan Islam. Temuan ini diharapkan dapat membantu pengambil kebijakan dan praktisi dalam mengoptimalkan implementasi MIS untuk meningkatkan daya saing lembaga pendidikan Islam.

Kata Kunci: Sistem Informasi Manajemen, Tantangan, Peluang, Pendidikan

INTRODUCTION

The development of information technology has brought tremendous impact in various aspects of life, including in the education sector. In this fast-

paced digital era, Management Information System (MIS) is one of the important components to support effective data management, administration, and decision making in educational institutions (Diah Hidayati, 2022). In Indonesia, the role of MIS is increasingly relevant in efforts to improve the quality of education, especially in Islamic education institutions such as madrasah and pesantren (Erdiyanto et al., 2020). However, the implementation of MIS in these institutions is not easy and faces various challenges that require special attention. In this context, this study seeks to examine the challenges and opportunities of MIS implementation in Islamic education institutions to provide a deeper understanding and relevant solutions (Lubis, 2020).

Islamic educational institutions in Indonesia have a strategic role in shaping a generation that is noble, competent, and competitive. However, along with the times, these institutions are required to not only maintain religious values, but also adopt technological innovations to improve the quality of educational services (Alfian & Ilma, 2023). Management Information Systems (MIS) can be a very effective tool to meet these demands, especially in the aspects of student data management, financial administration, human resource management, and monitoring of teaching and learning activities (Alavi & Gallupe, 2003).

Unfortunately, the implementation of MIS in Islamic education institutions has not gone as smoothly as expected. Many Islamic educational institutions are still grappling with limited technological infrastructure, lack of human resource competencies, and resistance to changes in organizational culture. These challenges are even more complex when associated with the traditional structure of Islamic educational institutions that are often different from public schools. Therefore, a comprehensive study is needed to identify the main barriers to MIS implementation while looking for opportunities that can be utilized to overcome these barriers (Pohl, 2009).

The phenomenon of slow adoption of technology in Islamic educational institutions is the main concern in this study. On the one hand, information

technology has developed rapidly and offers various benefits to improve the efficiency and effectiveness of managing educational institutions (Ananda et al., 2017; O'Brien & Marakas, 2006). On the other hand, many Islamic educational institutions still rely on manual systems in data management and administration, which is not only time-consuming but also prone to errors. For example, many Islamic boarding schools still use manual records for student attendance, payments, and documentation of activities, resulting in data that is not integrated and difficult to access.

The main problem faced is how Islamic education institutions can adopt MIS effectively amidst the existing constraints. These constraints include technical aspects, such as lack of technological infrastructure and internet network; managerial aspects, such as lack of training for staff and teachers; and cultural aspects, such as resistance to change and lack of understanding of the importance of digitization (Hafeez et al., 2021). This research seeks to answer key questions related to how these challenges can be overcome and what opportunities can be utilized to support MIS implementation in Islamic education institutions.

Previous studies have extensively discussed the implementation of MIS in various educational sectors, but the majority of these studies have focused on public schools or universities. For example, research by Smith et al. (2021) shows that the success of MIS implementation is highly dependent on the readiness of technological infrastructure and human resource competencies. Meanwhile, a study by Rahman (2022) in Indonesia highlighted the importance of government policy support in encouraging technology adoption in the education sector.

However, studies that specifically highlight the context of Islamic educational institutions are still very limited. Existing research tends to ignore the unique characteristics of Islamic educational institutions, such as traditional organizational structures, strong religious values and the important role of local communities. Therefore, this study aims to fill the gap in the literature by focusing on the challenges and opportunities of MIS implementation in Islamic

education institutions. The novelty of this study lies in the holistic approach used to analyze the implementation of MIS in Islamic education institutions (Solikhin & Lailiyah, 2024). Unlike previous studies that only highlighted technical or managerial aspects, this study integrates various dimensions, including technical, managerial, organizational culture, and religious values. This research also focuses on the specific context of Islamic educational institutions, which have unique characteristics compared to public schools or other educational institutions (Rahma & Perawironegoro, 2024). In addition, this study offers a new perspective on how religious values and local culture can be strengths, not barriers, in the implementation of MIS. Thus, this study is expected to provide not only theoretical contributions but also relevant practical recommendations for stakeholders in the Islamic education sector.

The urgency of this research is also based on the fact that digitalization is an urgent need in the modern era. Without adequate technology adoption, Islamic education institutions risk falling behind in providing quality education services. In addition, this research can serve as a reference for policy makers, managers of educational institutions, and academics interested in the management of technology-based education in the context of Islamic educational institutions (Sahin, 2018).

As a basic assumption, this research departs from the argument that the success of MIS implementation in Islamic educational institutions is not only determined by technological readiness, but also by alignment with organizational values and culture. Strong religious values, if managed well, can be the foundation for change towards more effective digitalization. In addition, the active involvement of all stakeholders, including the government, the community, and the educational institution itself, is a key factor in supporting the success of MIS implementation (Akhmad et al., 2024).

With a holistic and integrative approach, this research is expected to make a significant contribution in improving the quality of management of Islamic education institutions in Indonesia. The results of this study are not only

academically relevant but also have broad practical implications for policy development and MIS implementation strategies in the Islamic education sector.

RESEARCH METHOD

The This research uses a qualitative approach based on a literature study to explore in-depth understanding of the implementation of Management Information Systems (MIS) in Islamic educational institutions, especially in identifying challenges and opportunities that arise. Data were collected through literature review, including relevant scientific journals, books, research reports, policy documents and academic articles. It was analyzed using content analysis techniques to identify key themes, patterns and relationships that answer the research questions.

The research stages include determining the focus of the study, formulating research questions, searching literature through academic databases, selecting sources based on relevance and credibility, and triangulating data for validity of results. This research aims to identify the main challenges, opportunities that can be utilized, and formulate strategic recommendations to support more effective MIS implementation. The results are expected to make theoretical and practical contributions to the development of management information systems in the education sector, as well as serve as a basis for recommendations for policy makers and education practitioners. This research has significance in providing in-depth insights into the dynamics of MIS implementation in Islamic educational institutions, which in turn can contribute to improving the quality of education in Indonesia.

The main objectives of this study are to identify the main challenges in the implementation of MIS in Islamic education institutions, analyze the opportunities that can be utilized, and formulate strategic recommendations to support more effective implementation. This research is important because it can provide deeper insights into the dynamics of MIS implementation in Islamic education institutions, which in turn can help improve the quality of education

in Indonesia.

FINDINGS AND DISCUSSION

Research The results of this study indicate that the implementation of Management Information Systems (MIS) in Islamic educational institutions is a strategic need that cannot be ignored. In the context of the growing world of education, the need for efficient information technology is increasingly urgent to ensure better and integrated management. MIS in Islamic education institutions can serve as an effective tool to improve the quality of education management, which includes various aspects of administrative, academic, financial, as well as human resource management (N. Putri et al., 2024). However, the successful implementation of MIS does not come by itself. There are a number of key challenges that Islamic education institutions must face. One of the main challenges is the readiness of technological infrastructure, which is often an obstacle for many educational institutions that still rely on manual or conventional systems (Turnbull et al., 2021). In addition, the quality of human resources (HR) involved in MIS management is also a key factor. Limited understanding and technical skills in using these systems can hinder an optimal implementation process. This indicates the need for training and competency improvement for MIS management staff so that they can operate the system properly (Leonard-Barton, 1988).

Another challenge is the resistance to change that often occurs among the staff or managers of educational institutions. Many Islamic education institutions have become accustomed to traditional systems and are hesitant about adopting new technologies (Almaiah et al., 2020). For this reason, it is important for management to communicate the benefits and urgency of using MIS, as well as provide full support in the transition process towards a technology-based system (Solikhin & Lailiyah, 2024).

On the other hand, there are a number of opportunities that can be utilized to support MIS implementation more effectively. One of them is the opportunity

to improve operational efficiency (Musa et al., 2022). With MIS, Islamic education institutions can reduce administrative burdens that often take a lot of time and effort, and minimize errors caused by manual recording (O'Brien & Marakas, 2006). In addition, MIS enables more accurate and integrated data collection, which in turn can be used to formulate more precise and data-driven policies. Another opportunity is the potential to increase transparency and accountability in the management of educational institutions (Diah Hidayati, 2022). With an integrated system, every transaction or activity carried out can be recorded clearly, making monitoring and evaluation easier. This not only increases the trust of various related parties, but also creates a more professional and trusted educational environment (Alfian & Ilma, 2023).

Main challenges faced by Islamic Education Institutions in implementing MIS

a. Speed of Technology Development

The speed of development of information technology is one of the main challenges in the implementation of Management Information Systems (MIS) in Islamic educational institutions. Information technology is developing very quickly, and this requires educational institutions to be able to adapt to the changes that occur. On the one hand, technological advances offer various benefits and opportunities for Islamic educational institutions, but on the other hand, it also adds complexity to the process of implementing an optimal MIS (Islam et al., 2024).

The speed of technological innovation requires educational institutions to keep their information systems up to date. The MIS implemented today may no longer be relevant in the next few years as new technologies continue to emerge (Sudipa et al., 2023). For example, changes in the hardware and software used in a MIS often require updates that can affect smooth operations. Islamic education institutions that cannot keep up with these developments may be left behind in the competition to provide quality education, as many education systems now rely on technology to MIS plify and improve teaching and learning, administration and communication

(Lundeto et al., 2021).

The speed of technological development often exceeds the ability of educational institutions to accommodate these updates. One of the main challenges is limited resources, both in terms of finances and human resource competencies (Lundeto et al., 2021). Islamic education institutions, especially those in resource-limited areas, may experience difficulties in accessing the latest technology or in financing the needed system updates. Even if system updates can be made, major challenges arise in terms of HR training and capacity building (Yusuf & Sodik, 2023). It takes time and money to ensure that education managers, teachers and support staff have sufficient understanding and skills to operate the new systems (Almaiah et al., 2020).

This also affects the organizational structure and culture of Islamic education institutions. Effective MIS implementation often requires changes in structured ways of working, as well as a work culture that is more open to change (Perawironegoro, 2018). Rapidly developing technology demands innovation in management and organization, but not all institutions are ready to face these changes. Some institutions may experience resistance to change, especially among managers who have long been accustomed to manual or traditional methods. This change process requires a good strategy so that new technology can be accepted and utilized optimally (Gorry & Scott Morton, 1971).

The rapid development of technology also leads to uncertainties related to data security and system integrity. With the emergence of new technologies such as artificial intelligence (AI), big data, and cloud computing, Islamic education institutions must face the challenge of maintaining the security and confidentiality of data stored in the MIS (Laudon & Laudon, 2017). The speed at which new technologies are implemented can lead to undetected security gaps, potentially causing significant losses, especially in terms of students' and staff's personal data. Therefore, educational institutions need to ensure that technology

implementation is accompanied by measures to protect data, as well as ensuring that the systems used are reliable in the long term (Alavi & Gallupe, 2003).

One of the challenges arising from the rapid development of technology is the alignment of information systems with the curriculum and learning processes applied in Islamic educational institutions. Technology should be encouraged to support the improvement of the quality of education and not just for administrative purposes. Therefore, educational institutions need to ensure that the MIS implemented is not only effective in managing data and information, but also in supporting technology-based teaching and learning. The integration of technology in the curriculum needs to be done carefully in order to enhance students' learning experience, rather than distracting them from the main purpose of education (Haleem et al., 2022).

b. Technology Infrastructure

Technology infrastructure is a key element in the successful implementation of Management Information Systems (MIS) in Islamic educational institutions. The success of an information system depends not only on the software used, but also on how well the technology infrastructure supports it (Murtopo & Erwandi, 2020). A strong and reliable infrastructure will ensure that the MIS can run efficiently and effectively, while a weak infrastructure will pose various challenges and obstacles in the implementation process. In many Islamic educational institutions, especially those in resource constrained areas, basic infrastructure such as stable internet networks and adequate hardware are often not available (Solikhin & Lailiyah, 2024). An unstable or slow internet connection can cause disruptions in MIS operations, slow down workflow, and even lead to loss of important data. In addition, hardware such as computers, servers, and other supporting devices that are outdated or not powerful enough to handle sophisticated systems can degrade MIS performance (Wijaya & Risdiansyah, 2020).

The successful implementation of MIS in Islamic educational institutions is highly dependent on the readiness of the institution to invest in technological infrastructure. Purchasing hardware, developing network systems, and maintaining hardware require a lot of money. Islamic educational institutions with limited budgets often find it difficult to provide good enough infrastructure to support MIS implementation. This funding constraint is one of the significant inhibiting factors, considering that many Islamic educational institutions prioritize spending on other operational needs, such as teaching salaries, physical facilities, and procurement of teaching materials (Alavi & Gallupe, 2003).

Network quality and internet connectivity are critical factors that affect the smooth operation of MIS . In many Islamic education institutions, especially in rural or less developed areas, the quality of the internet network is still a big problem (Pohl, 2009). Unstable or unavailable connections can cause disruptions in the process of data collection, information processing and communication between parties involved in education management. In this case, MIS implementation can be hampered due to system failure in synchronizing data in real-time or slow access to information (N. Putri & Ristianti, 2024).

In many Islamic educational institutions, besides the MIS , there may be other systems already in place, such as a separate financial system or academic system. One of the major challenges is how to integrate the new MIS with existing systems (Sahin, 2018). The existing technology infrastructure must be able to support the integration process between different systems so that data can be exchanged smoothly, without any interference or data inconsistencies. Infrastructure limitations in terms of integration between systems can lead to data duplication, misinformation, or even failure in data-based decision making (Murtopo & Erwandi, 2020).

Once the MIS is implemented, maintenance and technical support are the next challenges associated with the technology infrastructure. Islamic

education institutions often do not have enough technical teams to handle problems that arise after the system is in place. Limitations in terms of hardware maintenance, software updates and prompt troubleshooting can cause disruptions in MIS operations. Without adequate technical support, educational institutions can have difficulty in ensuring that the system continues to run properly and without problems (Nurakun Kyzy et al., 2018).

c. Quality of Human Resources

The quality of human resources (HR) plays a very important role in the successful implementation of Management Information Systems (MIS) in Islamic educational institutions. Although adequate technology and infrastructure can support the system, without trained and competent human resources, MIS implementation can be hampered or even fail (Faj, 2011). Challenges related to the quality of human resources in the management of MIS in Islamic education institutions can be divided into several important aspects that need serious attention in order for the implementation process to be successful.

One of the biggest challenges in implementing MIS in Islamic education institutions is the limited technical competence among managers and staff (Hasanah, 2023). Many Islamic education institutions, especially in less developed areas, face problems in recruiting or training staff who have adequate technical skills to manage sophisticated information systems. Limited understanding of information technology and the software systems used in the MIS can lead to errors in the operation of the system, mistakes in data input, or even a complete failure in the functioning of the system (O'brien & Marakas, 2006). The lack of training and competency development in information technology hinders the optimal use of MIS . Most of the managing staff involved may have educational backgrounds in non-technology fields, such as religious education or management, so they lack the technical skills needed to manage, maintain and optimize MIS . Therefore, Islamic education institutions need to focus on developing HR

capacity in terms of understanding technology, by providing ongoing training and resources to improve their technical skills (Apiyani, 2024).

Resistance to change can also slow down MIS adoption and lead to a mismatch between the implemented system and the operational needs of the institution. Therefore, it is important for the management of Islamic education institutions to overcome these barriers in a thoughtful way, for example through an open communication approach about the benefits of MIS , intensive training, and providing support to increase staff comfort in using the new system (Robert et al., 2022).

Islamic educational institutions are often faced with budget constraints that affect their ability to optimally conduct HR training. Training in MIS management requires a lot of money and time, including the cost of bringing in professional trainers, training courses, and procurement of other supporting equipment (Lundeto et al., 2021). This limited funding makes it difficult for Islamic education institutions to provide sufficient training for staff to understand and operate MIS properly. If Islamic education institutions are unable to allocate sufficient funds for human resource development in terms of technology, then the implementation of MIS will be disrupted and the implemented system cannot be used optimally (Robert et al., 2022). Therefore, it is important for educational institutions to find creative solutions in terms of training funding, such as cooperating with other institutions or seeking grant funds that can be used to improve the quality of HR training.

MIS implementation requires full support from the leaders of Islamic education institutions. Without strong commitment and leadership from institutional leaders, MIS implementation will be slow and fraught with obstacles. Good leadership will facilitate change management and encourage staff to accept and utilize technology (Musa et al., 2022). Leaders of Islamic education institutions need to be agents of change, communicate a vision of the importance of MIS , and encourage and model the use of technology. In

addition, institutional leaders must also ensure that the change management system is implemented effectively. This includes creating a culture that supports innovation and technology, and providing space for staff to develop through training and continuous learning (Haleem et al., 2022).

d. Data Security Issues

Data security is a critical issue in the implementation of Management Information Systems (MIS), especially in Islamic educational institutions that store a number of sensitive data, such as students' personal information, academic data, and financial information. Inadequate security can lead to data leakage, system damage, as well as loss of trust from users (students, parents, staff) and other stakeholders. These challenges related to data security issues need to be taken seriously in order for the MIS implementation to run smoothly and avoid greater negative impacts (Laudon & Laudon, 2017).

One of the biggest problems faced by Islamic education institutions in implementing MIS is the risk of data leakage and privacy breaches. MIS usually store students' personal data, such as name, address, date of birth, and academic history, which are highly sensitive. If this data is not properly secured, it will open up opportunities for irresponsible parties to access or exploit the information (Alavi & Gallupe, 2003). For example, leaked student data can be used for harmful purposes, such as fraud or identity theft. Many Islamic educational institutions do not yet have a clear policy on personal data protection, which leads to uncertainty in data management and storage. This uncertainty adds to the risk of privacy breaches, potentially damaging the reputation of the institution and reducing public trust in the managed education system.

With the increasing reliance on technology, Islamic educational institutions must face the threat of increasingly sophisticated cyber-attacks. Hacking, ransomware and malware are types of attacks that can threaten the integrity of data and the availability of MIS systems. Educational institutions

that use cloud-based systems or access data via the internet are vulnerable to attacks that can damage data, stop system operations, and damage the credibility of the institution (Gorry & Scott Morton, 1971). Another challenge related to data security issues is the limited knowledge and skills of human resources (HR) in managing data security (Alwy, 2022).

Many Islamic educational institutions have managing staff with non technical educational backgrounds, such as religious teaching or management, who do not have sufficient understanding in terms of technology and data security (Haleem et al., 2022). Without sufficient knowledge on how to protect data, management staff may make mistakes, such as ignoring proper data security procedures or using weak passwords, which opens the door for attacks or data leaks. These limitations in data security management are also related to the lack of training provided to staff on the importance of data protection, as well as the procedures to follow to secure data in the system (O'brien & Marakas, 2006).

Islamic educational institutions must also face challenges related to compliance with applicable data security regulations. In many countries, there are strict regulations regarding personal data protection, such as the General Data Protection Regulation (GDPR) in the European Union or the Personal Data Protection Law in Indonesia (Sandiza et al., 2024). Islamic education institutions that manage students' personal data must ensure that they comply with these regulations to avoid legal sanctions and to protect the rights of individuals (Apiyani, 2024). However, often Islamic education institutions do not fully understand or implement these regulations in their systems. This can lead to legal issues in the event of a breach of the data protection provisions. Therefore, it is imperative for educational institutions to develop a data security policy that complies with existing regulations and ensure that all parties involved in MIS management understand and comply with the policy (Ramirez, 2012).

e. System Integration

System integration is one important aspect that is often a challenge in the implementation of Management Information Systems (MIS) in Islamic educational institutions. MIS is expected to serve as an integrated platform that facilitates data management and administrative processes within educational institutions, such as student enrollment, financial management, scheduling, and academic reporting (Lundeto et al., 2021). However, the process of system integration can lead to data duplication, information inconsistency, and disconnection between the various systems in educational institutions. These challenges related to system integration need to be addressed carefully to ensure that the MIS functions optimally and meets the goal of efficient education management (Lubis, 2020).

Islamic educational institutions often have used several separate systems to manage various administrative functions. For example, systems for managing student academic data, financial systems and general administrative systems may operate separately and not be integrated. Integration between these systems becomes a major challenge as each system may be developed with different technologies or standards (Almaiah et al., 2020). These differences in data structures, formats, and system interfaces lead to difficulties in ensuring that data can be exchanged smoothly between systems. If the new MIS implemented cannot integrate existing systems, then Islamic education institutions will face problems such as data duplication, errors in data processing, or inaccuracy of information used for decision making (Wijaya & Risdiansyah, 2020). Therefore, it is important for educational institutions to plan system integration carefully, considering the technical capabilities to synchronize the old and new systems.

Effective system integration requires sufficient resources, both technical and financial. Islamic educational institutions are often limited in terms of budget and human resources who have the technical competence to handle system integration (Apiyani, 2024). Budget constraints prevent institutions

from using more sophisticated software or from hiring information technology consultants with expertise in system integration. In addition, management staff who do not have sufficient technical knowledge are also an obstacle in designing and implementing effective integration solutions (Alias et al., 2018).

This costly and time-consuming system integration is often difficult to achieve for Islamic education institutions with limited funds. Therefore, it is important to design an integration approach that is pragmatic, considers existing resources, and prioritizes integration between the most crucial systems first (Namiri et al., 2024). Another issue in system integration is the difference in data formats and standards used by various systems. Data collected from different systems may be incompatible or incompatible with each other, which may cause errors or difficulties in data processing (Sandiza et al., 2024) . For example, the financial system may use a different data format from the academic system in terms of managing transaction information or student payment history. It is important for Islamic education institutions to have clear policies regarding data standards and formats used in the MIS so that data can be easily exchanged and processed. In addition, system development should take into account the interoperability factor between systems, ensuring that systems can talk to each other and share data smoothly.

System integration also brings major challenges related to data security and privacy. When various systems are combined, data that was previously stored in separate systems will now be interconnected and processed in one larger platform (Robert et al., 2022). This increases the potential for data leakage if systems are not adequately protected. If sensitive data, such as personal information of students and staff, is not properly protected during the integration process, then educational institutions can face a serious risk of data leakage. Data security should be a top priority at every stage of system integration. Islamic education institutions need to ensure that the

integrated systems have sufficient layers of security, such as data encryption, strict access control and regular audits. In addition, it is important to ensure that appropriate data privacy policies and procedures are implemented to protect the personal data of system users (Haleem et al., 2022).

After successful system integration, thorough testing is essential to ensure that all systems function properly and data can be exchanged without interruption. However, it is often the case that this testing is not done to its fullest extent, which can cause problems when the system goes live. Errors in integration, such as missing or corrupted data, can affect the operation of the MIS and disrupt the administration of the institution.

f. User Behavior Change

Users' behavior change is also influenced by the extent to which they understand the benefits of the MIS. If users do not see the immediate benefits of the new system, they are less likely to change their habits and are reluctant to adopt the system. For example, administrative staff who are used to manual processes in managing student or financial data may feel that MIS does not provide significant convenience or efficiency (Tyoso, 2016). It is important for Islamic education institutions to ensure that users understand how the MIS will simplify their work, increase efficiency, and reduce the potential for human error. Clear and targeted communication of the long-term benefits of the system will help change users' views and encourage them to adapt to change (Metris, 2024).

MIS implementation not only affects the way users interact with technology, but also impacts their work patterns and responsibilities. Administrative staff, for example, may have to change the way they manage data or complete routine tasks, while teachers and education managers have to get used to new processes in academic assessment or reporting (Tyoso, 2016). Processes that were previously done manually or separately must now be done in one integrated system. This change can cause confusion or inconvenience, especially if users are not yet familiar with the changes in

their workflow. To minimize disruption to the institution's daily operations, it is important for Islamic education institutions to plan the transition carefully, provide support to users, and adjust policies and procedures to reflect these changes (Metris, 2024).

Changes in user behavior are also strongly influenced by their level of technological literacy. Many Islamic education institutions, especially those in areas with limited access to technology, face challenges related to low technical skills among MIS users (Tyoso, 2016). Administrative staff, teachers and students who are less skilled in using technological devices may find it difficult to adapt to the MIS, especially if the system is web-based or uses more complex technologies. Education and training tailored to the skill level of users is essential to overcome this challenge. Counseling on the basics of technology use and efficient ways to operate the MIS will help improve users' skills and confidence, ultimately increasing the system adoption rate (Leonard-Barton, 1988; Sandiza et al., 2024).

Opportunities and innovations of MIS Implementation in Islamic Education Institutions

Management Information Systems (MIS) in Islamic education institutions have great potential in improving operational efficiency and effectiveness, as well as supporting better management. Islamic education institutions, such as pesantren or madrasah, often face challenges in managing administration, financial data, and human resource management. MIS can provide solutions that can optimize these processes.

a. Massive and strong government support

Governments can provide support in various forms, such as strategic policies, budget allocations, infrastructure provision, and human resource training (Namiri et al., 2024). Some of the key opportunities that arise from this support include: First, Technology Adoption Acceleration. Government support, especially through policies and regulations, can accelerate the adoption of MIS technology in Islamic education institutions. With the

national program of education digitalization, Islamic education institutions can gain access to cutting-edge technologies, such as hardware, software, and technical training (Lundeto et al., 2021). Second, Data Integration and Standardization, the government can encourage the implementation of a standardized MIS so that there is effective data integration between Islamic education institutions. This supports data-driven decision-making, both at the institutional and national levels, and ensures that institutions are not left behind in information management (N. Putri et al., 2024). Third, Reducing Digital Disparities, Islamic education institutions often face the challenge of disparities in access to technology between urban and rural institutions. Massive government support, such as the provision of high-speed internet and software subsidies, can reduce this disparity, so that all institutions have equal opportunities to implement MIS (Namiri et al., 2024). Fourth, Innovation Incentives, the government can create a conducive environment for innovation by providing incentives in the form of research funds, collaboration programs with technology institutions, and awards for institutions that successfully develop innovative and sustainable MIS solutions (Lundeto et al., 2021; N. Putri et al., 2024).

This approach can be analyzed through Ludwig von Bertalanffy's Open Systems Theory, which emphasizes that educational institutions as systems must interact with their environment to survive and thrive (Tampubolon, 2020). In this context, the government acts as an external environment that provides inputs in the form of resources, policies and facilities that influence the success of MIS implementation. In addition, Everett M. Rogers' Diffusion of Innovations Theory is also relevant in examining how government support affects the MIS adoption process. In this theory, the government serves as a catalyst that accelerates the innovation process through its role as a "change agent" that provides access to information and minimizes barriers to adoption (Mailin et al., 2022; Metris, 2024).

b. Potential for improving the quality of education management

The implementation of MIS in Islamic educational institutions presents a great opportunity to improve the quality of educational management. In the era of digital transformation, the utilization of information technology is not only a necessity, but also a strategic tool to face global challenges (Lundeto et al., 2021; Metris, 2024). MIS enables efficient and integrated data management, making administrative processes faster, more accurate and transparent. In this context, educational institutions can optimize efficiency, increase accountability, and accelerate access to information for data-driven decision making (O'Brien & Marakas, 2006).

Factually, the implementation of MIS is able to improve administrative efficiency, which has been one of the main obstacles in education management (R. E. Putri & Yacob, 2021). Manual processes that are often time-consuming and error-prone can be replaced with automated systems (Tyoso, 2016). This includes managing student data, financial administration, lesson schedules, and preparing academic reports. With an integrated system, information becomes more accessible to all stakeholders, including principals, teachers, students and parents (Armanto, 2024). This transparency, in turn, creates better accountability and increases public trust in Islamic education institutions. In addition, the implementation of MIS also opens up opportunities to improve the quality of decision-making through the use of data. In education management, data generated by MIS can be analyzed to identify trends, evaluate performance and develop evidence-based strategies (Rivai et al., 2023). For example, data on student and teacher attendance rates, learning evaluation results, or budget spending patterns can be used to make more strategic and effective decisions (Alias et al., 2018).

Innovation is also an integral part of implementing MIS in Islamic educational institutions. One relevant innovation is the integration of technology with Islamic values (Jamaluddin et al., 2019). MIS can be designed to support curriculum management that includes aspects of aqidah, sharia,

and morals. In the financial context, this system can be adapted to sharia principles, such as the management of zakat, infaq, and waqf funds to support education financing (Jamaluddin et al., 2019; Namiri et al., 2024). On the other hand, analytical technology integrated in MIS enables institutions to understand the needs of students and teachers, improve learning, and design competency development programs in a more measurable manner. The use of MIS can also be utilized to develop online learning platforms. With the increasing need for technology-based education, especially after the pandemic, Islamic education institutions can use MIS to reach a wider range of students, including in remote areas. This also allows for more flexible and adaptive learning to the individual needs of students (Armanto, 2024; Nurdyansyah & Andiek, 2017).

Theoretically, the implementation of MIS in Islamic educational institutions can be explained through the Socio-Technical Systems Theory proposed by Eric Trist, Ken Bamforth, and Fred Emery. This theory underlines the importance of balance between technical and social aspects in the application of technology in organizations. In the context of Islamic education institutions, the success of MIS depends on the extent to which technology can be adapted and integrated with the existing work culture, Islamic values, and social structures (Vientiany et al., 2024).

c. Human Resources Capability Development Opportunities

In the perspective of organizational theory and technological innovation (Rogers, 2003), the implementation of MIS can be considered as an innovation that demands changes in the structure, culture, and capabilities of human resources in Islamic education institutions (Tampubolon, 2020). HR development should be seen as a strategic investment that not only improves adaptation to technology, but also encourages the competitiveness and sustainability of Islamic education institutions in the digital era. HR development is a key aspect in ensuring successful adaptation to this system, given the increasingly strategic role of

technology in supporting the operations of educational institutions (Murtopo & Erwandi, 2020; Solikhin & Lailiyah, 2024; Turulja & Bajgoric, 2018).

Based on human capital theory, the quality of human resources plays a central role in improving the competitiveness and sustainability of an organization. Therefore, the opportunity to develop HR capabilities in the context of MIS implementation is a very relevant issue to be discussed (Widiansyah, 2017). MIS provides an opportunity to improve the digital competence of human resources in Islamic education institutions. Information and communication technology integrated through MIS requires education personnel and institutional managers to have adequate skills in operating education management software (Fauzi et al., 2023; Zebua et al., 2023).

Intensive training is needed so that they can master MIS applications that support various functions, such as administrative management, academic data and finance. In addition, MIS allows institutional managers to utilize big data in strategic decision-making. With data available in an integrated manner, education personnel can be trained to analyze information comprehensively, resulting in more informed and evidence-based decisions (Zebua et al., 2023). MIS -based managerial competency development is another significant opportunity. Islamic educational institutions often face challenges in systematic management (Tyoso, 2016). Through MIS , managers can optimize work efficiency by automating administrative tasks that were previously done manually. Analytical competence is also a priority in HR development, given that MIS provides data that can be processed to support more strategic decision making (Metris, 2024).

Thus, MIS can help strengthen the managerial capacity of Islamic education institutions, so that they are able to adapt to the demands of the times. Furthermore, the low technological literacy in many Islamic educational institutions also presents a great opportunity for HR

development. The implementation of training and seminars can help increase the awareness and understanding of education personnel regarding the importance of technology in supporting the education process (Perawironegoro, 2018). More than just understanding the function of MIS, HR can also be invited to integrate technology in the learning process. For example, they can use the data generated by MIS to design learning that is more personalized and relevant to learners' needs. Another important opportunity is the creation of collaboration and networking. The implementation of MIS opens space to partner with various parties, such as the government, private sector, and other educational institutions (Nurdyansyah & Andiek, 2017).

This collaboration can be used to conduct joint training programs or form a learning community that allows sharing knowledge and experiences related to the use of MIS. This kind of collaborative approach not only improves HR competencies, but also strengthens relationships between institutions in order to support each other's digital transformation (Turulja & Bajgoric, 2018).

CONCLUSION

The implementation of Management Information Systems (MIS) in Islamic educational institutions has great potential to improve administrative efficiency, transparency and quality of educational services. Despite challenges such as limited human resources, technological infrastructure and resistance to change, the opportunity for success remains. Government support and the availability of increasingly affordable technology are key factors in this process. This study recommends strengthening human resource capacity, expanding technological infrastructure and integrating MIS in the strategic policies of Islamic education institutions. With these measures, Islamic education institutions can optimize MIS implementation and improve competitiveness in the modern era. The

findings are expected to provide guidance for policy makers and practitioners in facing challenges and capitalizing on opportunities.

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