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Optimizing Information Management to Enhance Innovation in Administrative Services in High Schools

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ABSTRACT

The rapid advancement of science, information, and communication technology has significantly transformed the education sector. In this context, implementing a Management Information System (MIS) is crucial for supporting effective data management and informed decision-making. However, administrative services at Madrasah Aliyah Negeri 1 Banyuwangi continue to face challenges, including complex procedures, inefficient data processing, and limited use of technology, which affect service quality and user satisfaction. This study aims to examine the optimisation of MIS in improving administrative service innovation, evaluate its effectiveness, and identify factors influencing its implementation. A descriptive qualitative approach with a phenomenological perspective was employed. Data were collected through participatory observation, semi-structured interviews, and documentation, and were analysed thematically. The findings indicate that MIS implementation has been systematically planned by integrating human resources, documentation, and technological tools. Its application through platforms such as EMIS, SIMPATIKA, RDM, AMS has improved data management and service delivery. Continuous evaluation further supports system refinement. Overall, MIS implementation enhances accuracy, efficiency, and service speed, while strengthening decision-making and promoting innovation in educational administration.

INTRODUCTION

The rapid advancement of science, information, and communication technology has brought significant transformation across various sectors, including education (Balaban et al., 2023; Timotheou et al., 2023; Wang et al., 2024). Within this context, the implementation of a Management Information System has become increasingly important in supporting effective data management and ensuring the availability of accurate information for organisational decision-making (Ionescu & Diaconita, 2023; Shojaei et al., 2024; Shwedeh et al., 2024). This system integrates human resources, procedures, and technological tools to collect, process, store, and distribute information efficiently to support managerial functions. However, in practice, the quality of administrative services in senior high schools in Indonesia continues to encounter several challenges, including complex service procedures, suboptimal data processing, and limited utilisation of information systems in administrative activities (Chanimbe & Dankwah, 2021; Dacholfany et al., 2024; Gibbs, 2023). These conditions contribute to inefficiencies in service delivery and lower levels of user satisfaction, indicating

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a clear gap between the theoretical potential of information management systems and their actual implementation in educational institutions (Adhikari & Shrestha, 2023; Stamenkov & Zhaku-Hani, 2023; Taherdoost & Madanchian, 2023). Therefore, optimising information management becomes a strategic necessity to foster more effective, transparent, and responsive administrative service innovation, as well as to support the continuous improvement of educational service quality. (Laudon & Laudon, 2018; O'Brien & Marakas, 2011).

Previous studies have consistently highlighted the important role of information management in enhancing the effectiveness of educational administrative services. Research by (Hoerunnisa, Lestari, and Abdurohim, 2024) demonstrates that implementing educational management information systems significantly improves administrative service quality by enabling faster, more accurate data processing. Similarly,(Ariatpi and Ismatullah, 2024) found that the adoption of management information systems enhances efficiency, effectiveness, and productivity in educational administration. (Nazifah et al. 2024) further reveal that integrating such systems into schools enhances administrative management, academic services, and information transparency for service users. In addition, (Rahman and Afriza, 2021) emphasise that the competence of administrative staff in managing information systems is crucial to the success of school administrative services. Supporting this, (Huang, 2023) reports that management information systems improve the effectiveness of student data management while facilitating the transition toward digital-based educational services. (Malik, Chotimah, and Junaris, 2023) also confirm that these systems enable schools to manage administrative services more systematically. Taken together, these findings underscore the importance of optimising information management as a strategic approach to fostering innovation in administrative services, particularly in senior high schools.

This study examines how optimising Management Information Systems can enhance innovation in administrative services at the senior high school level. More specifically, it seeks to identify how information management practices are implemented in managing school administrative data, evaluate the effectiveness of information systems in supporting administrative service processes, and analyse the key factors that influence the success of information-based service innovation. In addition, this study aims to explore the extent to which optimising information management improves efficiency, accuracy, transparency, and overall service quality for educational service users. Through this investigation, the study intends to provide a comprehensive understanding of effective information management strategies that can support administrative service innovation, strengthen organisational performance, and enhance user satisfaction within educational institutions.

This study is grounded in the argument that optimising information management is a key driver in fostering innovation in school administrative services. Well-structured, accurate, and technology-based information management enables senior high school administrative processes to operate more effectively, efficiently, and transparently. Within the context of educational organisations, the implementation of Management Information Systems is believed to enhance data processing quality, accelerate administrative workflows, and improve information access for all school stakeholders. However, in practice, many educational institutions have yet to fully optimise information management systematically, resulting in administrative services that are often slow, less accurate, and insufficiently

responsive to user needs. Therefore, this study argues that optimising information management through the effective utilisation of information systems, the enhancement of administrative staff competencies, and the integration of data management will significantly contribute to the development of innovative administrative services, ultimately leading to improved overall quality of educational service delivery.

RESEARCH METHODS

This study focuses on Madrasah Aliyah Negeri 1 Banyuwangi as the unit of analysis, examining administrative service practices within the institution as the primary object of investigation. The research employs a qualitative descriptive design with a phenomenological approach (Oluka, 2025; Watson, 2025), selected to provide an in-depth understanding of individuals' lived experiences and interpretations of administrative processes and information management. The sources of information consist of key informants, including school administrators and staff directly involved in administrative services, supported by relevant institutional documents. Data collection was carried out through participatory observation, which allowed the researcher to be directly involved in ongoing activities, and through semi-structured interviews, which provided flexibility for deeper exploration of participants' perspectives. In addition, documentation techniques were used to gather supporting data in the form of records, reports, and visual materials. Data analysis followed an interactive model involving data reduction, data display, and conclusion drawing/verification, (Miles et al., 2014) while interpretation was conducted through a thematic analysis to capture patterns, meanings, and insights related to the implementation of management information systems to enhance administrative service innovation.

RESULTS AND DISCUSSION

Result

Management Information System Planning to Improve Administrative Services at State Islamic Senior High School 1 Banyuwangi

The planning of the Management Information System in improving administrative services at Madrasah Aliyah Negeri 1 Banyuwangi is carried out through an internal control framework that integrates human resources, documentation, and information technology. This planning is intended to enhance the quality of administrative services while strengthening the institution's credibility. In general, the planning process consists of three main stages, namely defining service objectives, determining service targets, and selecting appropriate media or applications to support administrative processes. The formulation of MIS objectives aligns with both short- and long-term institutional planning, reflecting the school's vision of achieving excellence in science and technology grounded in faith, piety, and environmental awareness. The implementation of this system is expected to enable more systematic data management and support leadership in making informed decisions, as reflected in a staff member's statement that MIS helps organise data more effectively and simplifies decision-making processes.

The primary target of MIS implementation is to improve the quality of administrative services, particularly for students, as the main service users. Through this system, previously manual administrative processes have become faster, more accurate, and more efficient. This is supported by an information system operator's statement that digital data storage

significantly facilitates administrative services for both students and teachers In practice, the madrasa utilises several supporting applications, including EMIS, SIMPATIKA, RDM, AMS each serving specific functions such as managing student and institutional data, handling teacher administration, processing digital report cards, managing correspondence, and monitoring student discipline. The integration of these applications demonstrates that the effective use of information systems is crucial to optimising information management and enhancing the overall quality of administrative services within the institution.

Table 1. Planning Aspects of Management Information Systems in Improving Administrative Services

No	Planning Aspect	Description of Research Findings
1	Management Information System Planning	The planning of the Management Information System at MAN 1 Banyuwangi is conducted through an internal control framework that integrates human resources, documentation, and information technology to enhance the quality of administrative services and strengthen the institution's credibility.
2	Defining Service Objectives	The objective of implementing the Management Information System is to support decision-making processes and improve organisational effectiveness. Planning is developed based on both short- and long-term programs aligned with the madrasa's vision: "Excellence in Science and Technology Based on Faith, Piety, and Environmental Awareness."
3	Determining Service Targets	The primary target of MIS implementation is to improve the quality of administrative services for students, while accelerating the management of academic and non-academic data to ensure greater effectiveness and efficiency.
4	Media / Information System Applications	The madrasa utilises several applications to support administrative services, including EMIS (student and institutional data), SIMPATIKA (teacher data and workload), RDM (digital student report cards), AMS (institutional correspondence)

Implementation of Management Information Systems in Improving Administrative Services at State Islamic Senior High School 1 Banyuwangi

The implementation of the Management Information System to improve administrative services at MAN 1 Banyuwangi represents a systematic effort to mobilise all organisational resources to achieve the planned objectives. This implementation involves the effective utilisation of human resources, documentation, and available information technology to ensure that administrative services are carried out efficiently and effectively Based on findings from interviews, observations, and documentation, the implementation process is structured into three main stages, namely service implementation, data management, and data distribution within the management information system framework.

At the implementation stage, the head of the madrasa coordinates all organisational units to actively participate in data collection and management. The data managed consists

of both static and dynamic data. Static data refers to information that rarely changes, such as the madrasa profile and the personal data of the principal, teachers, and students. In contrast, dynamic data is subject to periodic updates. In practice, the madrasa determines the type of data, the data-collection schedule, and the data-storage system. Each unit contributes according to its function: the student affairs unit manages student records and family backgrounds; the curriculum unit handles annual programs and instructional documents; the facilities unit oversees infrastructure data; and the public relations unit maintains communication with the community. This process demonstrates that the Management Information System is implemented in an integrated manner across organisational units.

In the data management stage, MAN 1 Banyuwangi utilises various technology-based applications, including EMIS, SIMPATIKA, RDM, AMS One key application is the Administration Management System (AMS), which manages incoming and outgoing correspondence digitally. Through this system, archiving, document retrieval, and distribution processes become more efficient and accessible. The system also provides information on the physical storage location of documents. The AMS is managed by three administrators: one super administrator and two users. With this system, data processing can be conducted online and in real time, resulting in more accurate and easily accessible information. Continuous data management is essential, as regular updates directly influence the quality of information used in decision-making processes within the madrasa.

The final stage involves distributing and disseminating the data to relevant stakeholders. At MAN 1 Banyuwangi, this process is facilitated through the AMS application managed by the One-Stop Integrated Service unit (PTSP). This system enables efficient, well-organised distribution of information, particularly for official correspondence. In addition to storing documents in digital form, the system also supports identifying the locations of physical documents. As a result, information dissemination becomes more effective, as data can be accessed by both internal stakeholders and external parties according to user needs. Overall, the implementation of the Management Information System at MAN 1 Banyuwangi demonstrates that the effective use of information technology for data management, storage, and distribution significantly enhances administrative service performance and supports faster, more accurate decision-making.

Evaluation of Management Information Systems in Improving Administrative Services at State Islamic Senior High School 1 Banyuwangi

Evaluation represents a crucial stage in the educational management process, as it provides insight into the level of success achieved by a program that has been implemented. In the context of the Management Information System at MAN 1 Banyuwangi, evaluation is conducted to assess the extent to which the system supports improvements in administrative services. This process does not merely focus on identifying the strengths and weaknesses of the implemented system but also emphasises the need for systematic improvements aligned with the institution's predetermined goals and targets. This perspective is consistent with Hadion Wijoyo's view that the evaluation of a management information system is not only intended to identify its advantages and limitations, but also to serve as a foundation for continuous system improvement and development.

The evaluation of the Management Information System at MAN 1 Banyuwangi is conducted to monitor the progress of system implementation over a given period and to

identify challenges that arise during its operation. Through this evaluation process, the madrasa can obtain valuable insights into the effectiveness of the system in providing accurate, relevant information to support educational management functions. In addition, evaluation serves as a form of accountability for the institution's programs. MAN 1 Banyuwangi conducts regular evaluations, including at the beginning of the program cycle, on a quarterly basis, and at the end of each semester. These evaluations aim to track program development, identify implementation obstacles, and formulate appropriate solutions based on prior findings. As a result, the evaluation process contributes significantly to improving the effectiveness and efficiency of administrative service management in a sustainable manner.

Discussion

The findings indicate that implementing a Management Information System (MIS) at MAN 1 Banyuwangi significantly enhances the quality of educational administrative services. At the planning stage, the madrasa emphasises internal control by effectively utilising human resources, documentation, and information technology. This finding aligns with (Laudon and Laudon, 2019), who argue that MIS planning should focus on meeting organisational information needs and supporting effective decision-making processes (Aghazadeh Ardebili et al., 2024; Aldoseri et al., 2024). The existence of both short-term and long term planning, guided by the madrasa's vision of excellence in science and technology grounded in faith, piety, and environmental awareness, enables the system to strengthen administrative service quality while reinforcing institutional credibility.

During the implementation phase, the MIS at MAN 1 Banyuwangi operates through three primary processes: service implementation, data management, and data distribution. The implementation process reflects strong integration among organisational units in managing both static and dynamic data (Aguinis et al., 2024; Shakir et al., 2024; Tanantong & Wongras, 2024). This is consistent with G. R. Terry's concept of actuating, which emphasises mobilising all members of an organisation to work collaboratively toward shared goals. The use of supporting applications such as EMIS, SIMPATIKA, RDM, AMS demonstrates how information technology facilitates real-time data processing and improves information accuracy (Liu & Yu, 2023; Muhamad et al., 2025; Rao, 2024).. This analysis supports (Anwar Darwis, 2014), who highlights that MIS represents a synergy between human resources and technological applications in transforming data into meaningful information for decision-making.

Furthermore, the processes of data management and distribution through applications such as AMS highlight that MIS functions not only as a tool for data collection but also as an efficient mechanism for information dissemination. This finding aligns with (Lukman Hakim, 2010), who emphasises that structured data management and distribution processes are essential to ensure that information remains relevant, accurate, and useful for decision-making. In the madrasa context, the use of AMS ensures that administrative information is readily accessible to stakeholders, including school leaders, teachers, students, and external parties who require such data.

At the evaluation stage, the madrasa consistently conducts monitoring and assessment activities to measure system effectiveness and identify areas for improvement. This approach

is consistent with (Hadion Wijoyo, 2012), who states that MIS evaluation should not only assess system strengths and weaknesses but also focus on continuous improvement and development (Amir et al., 2023; Murdha Anggara et al., 2024; Tabim et al., 2024). Regular evaluations conducted at the beginning of each cycle, quarterly, and at the end of each semester enable the madrasa to refine its administrative management strategies, improve operational procedures, and optimise the use of supporting applications.

Based on the overall analysis, it can be concluded that the implementation of MIS at MAN 1 Banyuwangi significantly enhances the effectiveness and efficiency of administrative services. The integration of vision-oriented planning, collaborative implementation across organisational units, and continuous evaluation demonstrates that MIS functions as a key driver of innovation in educational administration. This finding supports (Laudon and Laudon, 2019), who assert that effective information systems can improve organisational productivity, accelerate decision-making, and foster service innovation. Therefore, the implementation of MIS in this madrasa extends beyond mere data digitalisation, representing a systematic managerial strategy aimed at improving service quality and institutional performance in a sustainable manner.

CONCLUSIONS

The findings of this study highlight that the implementation of a Management Information System (MIS) at MAN 1 Banyuwangi serves as a key driver in enhancing the effectiveness and efficiency of administrative services, offering an important lesson that well-integrated information management can transform institutional performance when supported by strategic planning, collaborative execution, and continuous evaluation. The strength of this study lies in its contribution to educational management literature by providing an integrated perspective that positions MIS not merely as a technological tool, but as a comprehensive managerial strategy that combines human resources, digital applications, and organisational processes to improve transparency, data accuracy, and decision-making quality while fostering sustainable service innovation. However, this study is limited to a single institutional context and relies on a qualitative approach, which may not fully capture broader variations across different educational settings, demographic characteristics, or quantitative performance indicators; therefore, further research employing comparative designs, diverse samples, and mixed or survey-based methods is needed to generate more comprehensive insights that can inform more effective and widely applicable educational policies.

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