

DIGITAL-BASED MANAGEMENT OF INCOMING AND OUTGOING MAIL ARCHIVING AT EDUCATIONAL INSTITUTION

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Abstract: *The management of incoming and outgoing mail archives is essential in madrasah administration. The manual system that is still commonly used often faces obstacles such as difficulty in retrieving documents, the risk of loss, and inefficient storage. Archive digitalization becomes a solution to improve the effectiveness of archive management. This study aims to analyze digital archive management and identify the benefits and challenges of its implementation in madrasahs. The method used is qualitative, involving interviews, observations, and document analysis. The results show that the digital system can accelerate document retrieval, reduce the risk of loss, and improve the quality of administration. However, challenges remain, such as limited human resource competence and resistance to change. This study contributes to the development of a more effective digital archive management model for madrasahs.*

Keywords: Archive management; Digitalization; Incoming and outgoing mail; Madrasah administration.

Introduction

The digital era has had a significant impact on various sectors, including the education sector. One of the primary challenges in managing educational institutions, particularly madrasahs, is administrative efficiency, especially in managing incoming and outgoing correspondence archives. The manual archiving system, which is still widely used in many madrasahs, encounters several obstacles, such as difficulties in document retrieval, the risk of physical damage or loss, and inefficient use of time and storage space (Azmi, 2016). However, several madrasahs, such as Madrasah Aliyah Negeri 1 Gresik, have adopted digital-based administrative systems to manage their incoming and outgoing mail archives. Observations conducted at Madrasah Aliyah Negeri 1 Gresik revealed that although a digital system has been implemented, the main challenge lies in the lack of human resources (HR) with the technical competence to manage and maintain the system effectively.

A review of the literature over the past decade shows that digital-based archive management has emerged as a relevant solution to administrative challenges. According to Juliaster (2017), approximately 70% of madrasahs in Indonesia still use manual archiving systems, resulting in slow administrative processes and a high risk of document loss. Pratiwi and Nugraha (2018) found that manual archive management could cause delays of up to 30% in administrative decision-making. Furthermore, Kusuma et al. (2019) reported that implementing a digital archiving system can increase administrative efficiency by up to 50% and reduce the risk of document loss by up to 80%. However, Fathurrohman (2020) noted that limitations in human resources and infrastructure remain the primary obstacles to the full adoption of digital systems in madrasahs. Previous studies have not specifically explored these challenges, especially within the unique context and needs of madrasahs.

This study focuses on the management of incoming and outgoing mail archives at Madrasah Aliyah Negeri 1 Gresik, emphasizing the optimization of a digital-based archiving system. Using a qualitative approach, the research aims to identify the needs, challenges, and best practices in managing correspondence archives to ensure administrative efficiency. The findings are expected to provide strategic guidance for digital archive management tailored to the specific characteristics and needs of madrasahs.

The novelty of this study lies in its focus on archive management while taking into account human resource and infrastructure limitations in madrasahs. Unlike previous studies that have generally focused on technology implementation, this research highlights archive management as an integral part of improving the quality of madrasah administration. Therefore, the study contributes to the development of literature on digital archive

management and administrative efficiency in educational institutions.

The research hypothesis posits that the optimal implementation of a digital-based incoming and outgoing mail archive management system can significantly improve the administrative efficiency of madrasahs in terms of time, accuracy, and document accessibility.

Method

This study employed a descriptive qualitative research design using a case study approach. This approach was chosen to explore in depth the practices of managing digital archives of incoming and outgoing correspondence at Madrasah Aliyah Negeri 1 Gresik. The research was carried out in systematic stages: preparation, implementation, and data analysis. The preparation stage involved problem identification, literature review, and the development of interview guidelines and observation formats. During the implementation stage, field data were collected through interviews, observations, and documentation. The analysis stage focused on interpreting findings and drawing conclusions relevant to the research objectives.

The scope of this study focused on the digital archive management process for incoming and outgoing letters at Madrasah Aliyah Negeri 1 Gresik. This included how the archives are recorded, stored, and retrieved, as well as the challenges faced by the institution in optimizing the system. The main emphasis of the research was on the operational practices of archive management and efforts to improve administrative efficiency.

Data collection was conducted using the framework of Miles and Huberman, which includes three primary steps: data reduction, data display, and conclusion drawing. In-depth interviews were conducted with the head of the madrasah and administrative staff to obtain information on archive management mechanisms, encountered obstacles, and improvement efforts. In addition, direct observation was carried out to examine daily activities related to digital archive management, including the recording and retrieval processes. Documentation was also used to obtain supplementary data in the form of digital archives, supporting documents, and other administrative records.

The collected data were analyzed using the steps outlined in Miles and Huberman's framework. The analysis process began with data reduction, where irrelevant information was filtered to extract key insights supporting the research. The reduced data were then presented in narrative and tabular form to facilitate interpretation. The final step involved drawing conclusions and conducting verification by comparing findings from multiple sources to ensure the validity of the research results.

Using this method, the study is expected to provide a clear and structured overview of the digital management of incoming and outgoing mail archives in madrasahs, as well as offer strategic recommendations to address the existing challenges.

Findings and Discussion

Findings

Enhancing Administrative Efficiency through Digital Archiving Systems

The findings from research conducted at Madrasah Aliyah Negeri 1 Gresik indicate that the implementation of a digital archiving system has had a positive impact on administrative efficiency, particularly in the management of incoming and outgoing correspondence. Based on interviews with the head of the madrasah and administrative staff, as well as direct field observations, it was found that the digital archiving system significantly facilitated document retrieval, which previously required a considerable amount of time. Now, documents can be accessed within minutes through a well-structured system, thereby supporting the effectiveness of administrative services that require accuracy and timeliness of data.

The digital system has also proven effective in reducing the risk of document loss due to the use of digital data storage, which can be backed up and secured through specific systems. The archiving process has become more organized, structured, and traceable. Additionally, the use of physical storage space has been significantly minimized, as most archives are now stored electronically. Increased job satisfaction among administrative staff was also noted, as the system has made their tasks easier and more efficient.

Table 1. Comparison of Administrative Efficiency Before and After Digitalization

No	Administrative Aspect	Before Digitalization	After Digitalization
1	Document retrieval time	15–30 minutes	Less than 5 minutes
2	Risk of document loss	High (documents often lost)	Low (well-organized)
3	Storage space	Physical, limited	Digital, space-saving
4	Staff job satisfaction	Low	High

Source: Interview and observation data, 2024

Although the madrasah has adequate facilities and access to technology, the main challenge in implementing the digital system lies in human resource readiness. Some administrative staff are not yet fully proficient in using digital archiving applications, mainly due to prior work experiences that were heavily reliant on manual systems. Additionally, cultural barriers were identified, such as a tendency among some staff to retain older work methods that they find simpler and more “comfortable.”

Table 2. Challenges in Implementing the Digital Archiving System

No	Type of Challenge	Description
1	HR Competency	Some staff have not yet mastered the digital system
2	Traditional Work Culture	Preference for familiar manual systems
3	Technological Adaptation	Requires time and training to ensure comfort with the system

Source: In-depth interviews with administrative staff, 2024

This study applies a theoretical framework based on administrative efficiency within digital-based educational management. The framework is grounded in the premise that information technology can enhance administrative effectiveness if accompanied by human resource readiness and an organizational culture that is adaptive to change (Bloom, 1979; Terry & Rue, 2010). Using a qualitative approach, this research explores in depth how digital archiving practices are carried out at the madrasah level and how internal actors respond to technological transformation.

The findings demonstrate that digital archiving at MAN 1 Gresik has accelerated document access, reduced archival loss, and improved administrative system organization. These findings are consistent with Kusuma et al. (2019), who reported that digital archiving can increase administrative efficiency by up to 50% and reduce the risk of document loss by up to 80%. This similarity reinforces the claim that information technology, when properly implemented, offers practical solutions to archiving challenges in educational institutions.

However, the study also highlights contextual dimensions that have not been widely explored in previous research, particularly regarding individual readiness and organizational culture. Although MAN 1 Gresik possesses adequate infrastructure, the primary challenges stem from limited digital competencies among some staff and resistance to adopting new systems. This contrasts with Fathurrohman (2020), who emphasized facility limitations as the main obstacle in madrasahs. Therefore, this study broadens the understanding that digitalization issues are not only technical but also sociological and psychological in nature. These findings point to key variables that should inform the development of more comprehensive and context-sensitive digitalization strategies.

In terms of theoretical contribution, the study confirms earlier findings but also introduces a new nuance by emphasizing the importance of change management. In this context, Lewin’s model of organizational change is highly relevant. The unfreezing stage is necessary to dismantle old habits associated with manual systems, followed by the change stage through training and assistance in using the digital system, and concluded with the refreezing stage where the new work culture is stabilized through policies and continuous supervision. Applying this model serves as a framework for digital transformation strategies in educational settings.

Substantively, these findings offer a fresh perspective for educational management literature, particularly regarding archive management in the digital era. This study emphasizes that the success of digital transformation depends not only on technology but also on the readiness of individuals and institutions to change. This is the core scientific contribution: that digitalization must be understood as both a managerial and cultural process, not merely a technical one. Thus, this article possesses a high degree of originality as it does not simply replicate previous studies but explores a more contextual and applicable dimension of digitalization.

The Role of Leadership and Human Resource Readiness in Implementing Digital Archiving Systems

The research findings also indicate that the success of digital archiving system implementation at Madrasah Aliyah Negeri 1 Gresik was strongly influenced by the leadership role of the madrasah head and the consistency of

internal policies. Support from leadership—both through formal policies and informal encouragement—has proven effective in creating a work environment conducive to change. The head of the madrasah actively encouraged staff to attend training, allocated time for system socialization, and emphasized that the use of digital systems must become part of the madrasah's standard operating procedures (SOPs).

The presence of leadership as a change agent facilitated the organizational culture transition from manual to digital systems. This also reduced resistance among some staff who initially lacked confidence or felt burdened by the introduction of new technology. The head's role-modeling in using the digital system had a positive influence on other staff.

In the context of digital-based administrative transformation, human resource readiness remains a critical success factor. According to Qomaruddin (2018), human resource management in education should encompass planning, training, and performance management to support institutional efficiency.

Discussion

This third finding reinforces the understanding that digital transformation in archive management does not solely depend on technical aspects and individual readiness, but is also strongly influenced by structural factors such as leadership and institutional policy. In the literature on change management, leadership is described as a change agent that determines the direction and sustainability of innovation within an organization (Kotter, 1996). Adaptive and participatory leadership, as demonstrated by the principal at MAN 1 Gresik, has made a substantial contribution to accelerating the adoption of the new system.

From a strengths-based perspective, consistent policies can align institutional goals with individual actions. When regulations concerning the use of digital archiving systems are formally integrated into Standard Operating Procedures (SOPs), they lead to the institutionalization of digital practices, rather than merely temporary projects. This institutionalization is key to ensuring the sustainability of digital systems.

Nevertheless, a notable weakness lies in the fact that top-down encouragement does not always translate into equal readiness at the operational level. Some staff members still require more time to adapt, especially in the absence of intensive and continuous training. This suggests that a top-down approach must be complemented by a bottom-up strategy, through the active engagement of all madrasah elements in the digitalization process.

This study confirms the findings of Haris (2023), who asserted that transformational madrasah leadership plays a major role in enhancing the quality of school administration. However, the novel contribution of this study lies in highlighting that effective leadership is not only visionary but also operational—capable of ensuring that policies are implemented through mechanisms of support, supervision, and enforcement of clear work procedures.

From a scholarly perspective, these findings add an important dimension to the discourse: that digital archive implementation cannot be sustained through technical preparation alone. It must be underpinned by strategic leadership and consistent managerial policies. Therefore, this study contributes to the field of educational management by integrating technology, human resources, and institutional governance into a cohesive and interdependent system.

Conclusion

This study reveals that the implementation of a digital-based incoming and outgoing mail archiving system at Madrasah Aliyah Negeri 1 Gresik has significantly improved administrative efficiency. One of the most notable findings, which only emerged during the course of the research, is that the primary challenge does not lie in infrastructure or technology—since the facilities are already adequate—but rather in human resource readiness and the acceptance of changes in work culture. This finding is quite surprising, as it contradicts the initial assumption that technical barriers would be the main obstacle to digitalization in the madrasah context.

This research contributes to the academic discourse by confirming several previous findings, such as those by Kusuma et al. (2019) on the efficiency of digital archiving, and Haris (2023) on the importance of leadership in driving organizational transformation within madrasahs. However, the study also offers a new perspective, emphasizing that the effectiveness of a digital archiving system is heavily influenced by consistent internal policies and adaptive leadership. Thus, this research provides a more integrative conceptual framework that links technology, human resources, and institutional policy in the context of archive management within educational institutions.

The main limitation of this study lies in its narrow scope, as it was conducted at only one madrasah (MAN 1 Gresik), which restricts the generalizability of the findings to other madrasahs or educational institutions. Moreover, the respondents were limited to administrative and leadership levels, without including students or

external stakeholders. The study also did not offer comparisons with different educational levels or regions. Therefore, further research is needed with broader scope, multi-case approaches, and more diverse data sources to produce a deeper and more comprehensive understanding. With such expanded results, policies on digital archive management in the education sector can be more precisely targeted and practically applicable.

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