International Journal of Economics, Business and Innovation Research
https://e-journal.citakonsultindo.or.id/index.php/IJEBIR
E-ISSN : 2964-0865
IJEBIR

Digitalization Of Training Record Administration At BDK Surabaya: The Role Of Infrastructure And Facilities, And The Innovation Of Barcode-Based Digital Signatures (TTE) As A Backup System

Dewi Nur Halimah[1], Muhammad Thohir[2], Mardiyah[3]

[1,2,3]Universitas Islam Negeri Sunan Ampel Surabaya, Jawa Timur

Abstract

Effective administration of training records is a crucial pillar for ensuring service quality and accountability within training institutions. This study aims to analyze the role of facilities and infrastructure procurement in the quality of training record administration services at the Religious Training Center (BDK) Surabaya, as well as to identify operational constraints and optimization strategies. A descriptive qualitative method was employed, utilizing triangulation techniques that included in-depth interviews, physical and digital observations, and an analysis of internal documents (RKBMN and asset registration). Data collection took place during a sixth-semester internship (MBKM program). The results indicate that BDK Surabaya has undergone a digital transformation through the SRIKANDI application and the implementation of Electronic Signatures (TTE). However, infrastructure readiness still faces technical challenges, such as failures in accessing the ANRI central server, manual daily logistics logging, and non-compliance with inventory transfers, which leads to invalid Room Item Lists (DBR). The novelty of this research lies in the formulation of an operational resilience strategy for records management based on local innovation. This study addresses a gap in digital records management research by proposing the integration of a Ministry of Religious Affairs (Kemenag) proprietary barcode-based electronic signature system as a local redundant system. This solution demonstrates that reliance on national digital infrastructure (SRIKANDI) can be mitigated without halting administrative service flows or the validation of training documents during central server outages. The study concludes that standardized infrastructure readiness contributes significantly to streamlining bureaucratic processes, preventing administrative malpractice, and enhancing both participant satisfaction indices and institutional accountability.

Keywords: Infrastructure procurement, Records administration, Service quality, SRIKANDI application, BDK Surabaya.

Copyright at authors some right reserved this work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.

International Journal of Economics, Business and Innovation Research
https://e-journal.citakonsultindo.or.id/index.php/IJEBIR
E-ISSN : 2964-0865
IJEBIR

INTRODUCTION

The current evolution of information and communication technology necessitates that public-sector education and training institutions improve their administrative governance to ensure efficiency, transparency, and accountability. A key element in fostering such transparency is the effective management of training records. These records serve not only as a historical account of activities but also as vital information, official evidence for legal purposes, and a basis for evaluating the performance of civil servants. In practice, the effectiveness and fluidity of record management depend on the readiness and adequacy of supporting facilities (Putri & Handayani, 2025). The availability of standardized facilities and infrastructure—encompassing both physical infrastructure and electronic document storage systems—is a prerequisite for reducing bureaucracy and ensuring smooth administrative workflows.

As a government institution tasked with providing education and training to personnel within the Ministry of Religious Affairs, the Religious Training Center (Balai Diklat Keagamaan/BDK) of Surabaya must respond promptly to the demand for the digitalization of administration. In alignment with the national policy on an electronic-based government system (SPBE), BDK Surabaya has implemented the Integrated Dynamic Archival Information System (SRIKANDI) to manage incoming correspondence, outgoing official documents, and the validation of electronic signatures (TTE) (Firmansyah & Muzid, 2025). This transformation has successfully improved storage processes and accelerated the dissemination of active training records. However, direct field observations reveal that the readiness of digital facilities and infrastructure still faces operational hurdles. These include reduced access speeds to the National Archives of the Republic of Indonesia (ANRI) central server during peak hours, a lack of automated integration for daily logistics inventory records, and non-compliance with procedures for moving physical assets between rooms, which has led to discrepancies in room-specific inventory lists.

Recent research in the field of records management indicates that the way facilities and infrastructure are managed directly influences an organization's operational efficiency and the satisfaction levels of service users (Santi et al., 2024). When records management facilities and infrastructure are organized effectively, misplaced information can be located quickly and accurately. Conversely, technical obstacles within digital archival infrastructure—compounded by a lack of adequate backup systems—can disrupt public services and diminish an institution's transparency and accountability (Almira, 2024).

Much of the existing literature on digital records management (Almira, 2024) & (Putri & Handayani, 2025) focuses primarily on the effectiveness of implementing the SRIKANDI application under normal operating conditions. However, there is a lack of in-

Copyright at authors some right reserved this work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.

depth study regarding risk mitigation mechanisms (fallback systems) at the operational unit level during instances of national system downtime. Addressing this research gap, this study introduces the concept of "digital administrative resilience"—specifically through the implementation of an independent, barcode-based electronic signature (TTE) system within the Ministry of Religious Affairs.

Objectives

This article intends

1. analyzing the role of infrastructure and facilities readiness in the quality of archival services at BDK Surabaya
2. identifying technical-operational constraints
3. formulating a mitigation model based on a local redundant system to ensure the institution's ongoing efficiency and accountability.

Benefits

1. Theoretical benefits
   a. Enhances knowledge regarding the importance of managing facilities and infrastructure in supporting the quality of administrative services.
   b. Provides an understanding of the relationship between the readiness of facilities and infrastructure and work efficiency.
   c. Broadens insight into the digitalization of archival administration through the SRIKANDI application and the use of Electronic Signatures (TTE).
   d. Serves as a reference for future research on facilities and infrastructure management and service quality.
2. Practical benefits
   a. For BDK Surabaya: Offers input for improving the management of facilities and infrastructure, asset inventory, and administrative services.
   b. For staff: Helps improve administrative processes, accelerates the retrieval of archives, and reduces manual tasks.
   c. For training participants: Supports faster, easier, and more accurate administrative services, particularly regarding the issuance of official letters and certificates.
   d. For future researchers: Acts as a reference and a basis for comparison for developing research on similar topics.
3. Benefits for the institution
   Based on the research findings, BDK Surabaya can derive several benefits:
   a. Identifying obstacles in the management of archival facilities and infrastructure.
   b. Improving the efficiency of administrative services related to training archives.
   c. Reducing the risk of loss or discrepancies in asset inventory data.

Copyright at authors some right reserved this work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.

d. Maintaining service continuity during disruptions to the SRIKANDI application through the use of independent TTE (Electronic Signature) barcodes.
e. Enhancing institutional accountability and the completion of administrative tasks.

4. Key benefits of this journal
This journal illustrates that adequate facilities and infrastructure, combined with the utilization of digital technology, can help improve administrative efficiency, accelerate service delivery, ensure the security of archives, and enhance accountability at BDK Surabaya.

Results

A. Condition of facilities and the procurement process for archival infrastructure and equipment at BDK Surabaya.

1. Condition of archival facilities and infrastructure at BDK Surabaya.

Facilities and infrastructure at the Religious Training Center (Balai Diklat Keagamaan/BDK) in Surabaya are not merely supplementary tools; they serve as foundational pillars that determine the overall effectiveness of the organization's performance. In-depth field interviews reveal that the management of archival infrastructure and State-Owned Assets (Barang Milik Negara/BMN) at this institution is currently undergoing a critical phase of reorganization. Existing conditions reflect an accumulation of challenges stemming from past management practices, which now negatively impact administrative order. A primary issue is the lack of comprehensive codification or standardized labeling of assets from the past; this creates a risk that the documentation trail for essential infrastructure—or the assets themselves—may be lost or misplaced among other files.

This administrative challenge is further compounded by the daily logistics management system—such as the tracking of office supplies and the utilization of storage space—which still relies on manual, handwritten records. In the absence of an integrated digital database, the calculation of opening balances and the movement of archival inventory must be performed repeatedly using conventional methods, a process that is both time-consuming and highly susceptible to human error.

On the other hand, the weaknesses in this recording system are compounded by a shortage of human resources specifically tasked with asset oversight. The limited number of personnel dedicated to managing state-owned assets (BMN) leads directly to lax control over the physical movement of items. In practice, staff members not involved in asset management frequently relocate office equipment or filing units between rooms without

Copyright at authors some right reserved this work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.

International Journal of Economics, Business and Innovation Research
https://e-journal.citakonsultindo.or.id/index.php/IJEBIR
E-ISSN : 2964-0865
IJEBIR

providing formal notification or completing internal transfer documentation. Consequently, the room-based asset inventory lists (DBR) become outdated and no longer accurately reflect the actual locations of assets on-site.

2. The procurement process for archival facilities and infrastructure at BDK Surabaya

The procurement process for facilities and infrastructure at BDK Surabaya strictly adheres to legal frameworks, in accordance with prevailing government regulations on the procurement of goods and services. The institution employs a multi-layered control mechanism to ensure that every rupiah of state budget expenditure is accountable and yields optimal benefits. While internal management still faces challenges regarding inventory, the upstream processes concerning the procurement of archival facilities and infrastructure at BDK Surabaya demonstrate a significantly more mature level of governance.

The procurement process begins with an objective needs analysis. Rather than acting on the subjective desires of individual work units, management evaluates proposals based on priority levels and their relevance to public services and the execution of training programs. These identified needs then undergo a critical review of planning documents. This step serves as a vital filter, distinguishing between urgent operational requirements and mere wants, thereby curbing potential budgetary waste from the outset. Once a proposal is approved, the Commitment-Making Official (PPK) drafts technical specifications and the Owner's Estimate (HPS), ensuring full compliance with the Input Cost Standards (SBM) established by the Ministry of Finance.

In its execution, BDK Surabaya utilizes a combination of two primary methods: third-party partnerships and self-management (*swakelola*). For capital expenditures and general facilities, the institution maximizes the use of the government's e-catalog system to ensure price transparency and minimize opportunities for corruption. Meanwhile, the self-management method is employed for specific state-related requirements. The entire process is only considered legally complete once the goods delivered by the provider pass a physical feasibility assessment and the transaction is formalized through a Handover Report (Berita Acara Serah Terima—BAST) before the treasurer authorizes payment.

This multi-layered regulatory mechanism for procurement aligns with theories of facilities and infrastructure management, which posit that the success of public procurement is measured by the consistency between budget planning and the actual physical implementation in the field. Strict constraints—enforced through the Standard Cost Budget (SBM) and the

Copyright at authors some right reserved this work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.

review of documentation—serve as preventive controls, ensuring that investments in public facilities yield long-term utility. Furthermore, a significant challenge currently facing BDK Surabaya stems from external factors: national budget efficiency policies. These policies require asset managers to be increasingly discerning in establishing priorities for facility procurement, given the limitations on available funding.

B. The Implementation and Role of Facilities and Infrastructure in the Administration of Training Records.

1. The Implementation and Role of Facilities and Infrastructure in the Administration of Training Records.

The administration of training-related records at the Surabaya Religious Training Center (Balai Diklat Keagamaan Surabaya) has transitioned from a conventional system to a digital one. Internal documentation indicates that the institution has adopted *Srikandi*—an integrated dynamic records management information system—developed through a collaboration between the National Archives of the Republic of Indonesia (ANRI) and the Ministry of Communication and Informatics. This system centralizes the management of all incoming and outgoing official correspondence, including training assignment letters, official document classifications, and active records of training participants, within a single database. Furthermore, the use of individual accounts for each civil servant (ASN) at the center facilitates document verification by the Head of the Administrative Sub-division and enables the application of electronic signatures.

Despite these improvements, the implementation of this digital system faces certain operational challenges. Staff responsible for records management frequently report issues with the performance of the central ANRI server, which can be slow or prone to errors due to the high volume of users from various institutions nationwide. To prevent administrative paralysis during potential system outages, the Surabaya Religious Training Center has implemented a mitigation strategy: the use of an independent, barcode-based electronic signature system provided by the Ministry of Religious Affairs. This alternative solution ensures that the distribution of training-related documents—such as participant summons or certificates—can continue digitally, eliminating the need to revert to conventional, manual (wet-ink) signatures.

When viewed in the context of archival literature, the digitalization initiative undertaken by BDK Surabaya aligns closely with the findings of (Layanan et al., 2026). They argue that the implementation of digital-based archival

Copyright at authors some right reserved this work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.

International Journal of Economics, Business and Innovation Research
https://e-journal.citakonsultindo.or.id/index.php/IJEBIR
E-ISSN : 2964-0865
IJEBIR

infrastructure is a crucial strategy for establishing administrative order within public institutions. Digitalization is considered capable of streamlining bureaucratic processes, safeguarding state documents from the risk of physical damage, and accelerating information retrieval—a vital capability when information is needed for the evaluation of training programs. According to this analysis, technical issues such as server slowdowns are a consequence of the transition period for technological infrastructure, which necessitates the presence of a local backup system to ensure that public services remain uninterrupted.

2. The strategic role of facilities and infrastructure in ensuring the utility of training records

   The presence of adequate facilities and infrastructure plays a vital role in the successful administrative management of training programs. Physical assets—such as proper storage spaces, filing cabinets, and computer equipment to support archiving systems—are more than just work tools; they are strategic instruments for ensuring the authenticity and security of training-related documentation.

   Records such as participant graduation histories, training curricula, and budget accountability reports possess long-term utility and must be protected against the risks of loss or physical deterioration. Inadequate infrastructure can lead to very serious operational difficulties. In the context of training, a lack of proper archiving facilities may result in the loss of essential data regarding program alumni, which, in turn, could disrupt future efforts to map employee competencies.

DISCUSSION

A. Analysis of the Impact of Infrastructure and Facilities Readiness on Bureaucratic Efficiency.

   Our research at BDK Surabaya indicates that the state of archival facilities and infrastructure is not yet fully optimal. In practice, we observed incomplete asset labeling, a shortage of personnel dedicated to managing State-Owned Property (BMN), and discrepancies between the Room-Based Asset List (DBR) and the actual condition of the assets. Consequently, archival staff must invest extra time in recalculating inventory balances, tracking the location of assets, and verifying supporting inventory documentation. Tasks that should be streamlined through integrated data systems are instead being performed repeatedly via physical inspections and manual document reconciliation.

Copyright at authors some right reserved this work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.

These findings suggest that the digitalization of archival administration at BDK Surabaya has not been matched by a corresponding digitalization of facilities and infrastructure management. There is a gap between the progress made in document management systems and the level of order maintained in the management of physical assets and logistics. This gap prevents the full realization of the efficiencies intended by the implementation of the SRIKANDI application and Electronic Signatures (TTE) across the broader administrative process. Time saved during document issuance is effectively consumed by inventory tasks, asset tracking, and the correction of inaccurate data. Thus, the core issue is not merely a lack of facilities, but rather a weak control mechanism once those facilities are in place. Adequate facilities will not yield effective governance unless accompanied by regular data updates, clearly defined responsibilities, consistent oversight, and established procedures for asset transfers.

The findings of this study align with the concept of facilities and infrastructure management, which frames planning, procurement, inventory, utilization, maintenance, and disposal as an interconnected cycle. The procurement of facilities cannot be separated from inventory and oversight activities. If any of these stages are not executed consistently, the accuracy of asset information and the effectiveness of services will decline (Putri & Handayani, 2025). From a public management perspective, facilities and infrastructure are organizational resources that must be managed effectively, efficiently, transparently, and accountably. Therefore, any discrepancy between the *Daftar Barang Ruangan* (DBR—Room-based Asset List) and the actual condition of assets in the field is not merely a technical issue; it also concerns the accountability of managing state-owned property. These findings can also be explained through the concept of a "socio-technical system." Administrative systems are determined not only by technological tools but also by people, procedures, organizational structures, and work culture. As an archival technology, SRIKANDI cannot function in isolation; it requires the support of competent human resources and a disciplined administrative culture (Salma et al., 2025).

The results of this study reinforce the work of (Putri & Handayani, 2025), which suggests that the use of digital systems can enhance the effectiveness of dynamic records management. Digitization facilitates faster document retrieval, reduces reliance on physical records, and improves the flow of information distribution. However, this study also expands upon those findings. While previous research has tended to emphasize the benefits of SRIKANDI under normal operational conditions, this study reveals that the success of digitization is also influenced by the quality of physical asset management and internal control

Copyright at authors some right reserved this work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.

systems. Consequently, the digitization of records should not be understood merely as the process of converting documents from a physical format to an electronic one. These findings are also in line with research by (Salma et al., 2025), which indicates that well-organized physical facilities and infrastructure contribute significantly to the effectiveness of office administrative governance. Although the 60.90% contribution figure originates from a different research context, the direction of those findings is consistent with the results of our study at BDK Surabaya—namely, that the orderly management of facilities and infrastructure is linked to administrative efficiency.

The implication of these findings is that BDK Surabaya needs to develop a management system for facilities and infrastructure that is integrated with its archival administration. Several measures can be taken, including re-inventorizing all assets and periodically updating the List of Goods in Rooms (DBR); implementing digital forms or systems for any movement of items between rooms; developing a digital-based inventory tracking system; assigning specific personnel or individuals responsible for assets in each room; conducting routine physical asset inspections; and providing staff training on procedures for managing state-owned property (BMN) and digital archives. Consequently, improving the quality of archival administrative services should not rely solely on the procurement of new technology, but also on refining procedures and strengthening internal oversight.

Critically, this study indicates that the success of digitalization at BDK Surabaya remains partial. While the institution has successfully implemented the SRIKANDI application, this transformation has yet to result in a fully integrated digital administrative ecosystem. The continued use of manual record-keeping and the movement of assets without updating the DBR demonstrate that digitalization has not yet fully altered the organization's work practices. It is important to note the common tendency to assume that the mere use of an application equates to a digital transformation. In reality, a true digital transformation should encompass changes in business processes, the division of labor, oversight patterns, human resource competencies, and organizational culture. If only the application changes while work procedures remain conventional, digitalization risks becoming merely an addition of tools rather than a systemic transformation. Furthermore, the assertion that facilities and infrastructure contribute 60.90% to the effectiveness of office administration should not be directly applied to the context of BDK Surabaya without conducting equivalent measurements. That figure originates from prior research involving different settings, methodologies, and instruments. Therefore, the findings of this study are best interpreted as contextual evidence that the

Copyright at authors some right reserved this work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.

management of facilities and infrastructure is linked to administrative efficiency, rather than as a basis for claiming an identical magnitude of impact.

B. Innovation of Independent Barcode-based Digital Signatures (TTE) as a Mitigation Strategy (novelty).

Research indicates that SRIKANDI has helped accelerate correspondence processes and the management of active records at BDK Surabaya. However, its implementation still faces challenges, such as slow access speeds and disruptions to the central ANRI server—particularly when the number of users increases during peak periods. Such disruptions can hinder the issuance of participant summons, certificates, and other training-related administrative documents. To address this, BDK Surabaya utilizes an independent, barcode-based electronic signature (TTE) system provided by the Ministry of Religious Affairs as an alternative whenever SRIKANDI is inaccessible.

These findings demonstrate that total reliance on a centralized system can create operational vulnerabilities. While centralized systems offer advantages in terms of standardization, integration, and national-level oversight, any disruption at the core can impede regional work units, as they lack direct control over service restoration. The adoption of an independent, barcode-based electronic signature system reflects organizational adaptability; rather than reverting entirely to manual processes, BDK Surabaya employs an alternative solution to ensure that services continue. This highlights how local innovation can serve as a safeguard against the risks of national infrastructure failures. Nevertheless, such an alternative system should not be viewed merely as a technical fix. A backup system must also be supported by a legal framework, security standards, authentication mechanisms, archiving procedures, and clear protocols for synchronizing documents once the primary system is back online.

These findings can be linked to the concept of "operational resilience"—an organization's capacity to maintain critical functions, respond to disruptions, and restore services within an acceptable timeframe. In the context of this study, operational resilience is determined not only by the availability of the primary application but also by the readiness of backup systems, recovery procedures, and the decision-making capabilities of personnel during disruptions. These findings also relate to the concept of "business continuity." The administration of training records is a critical function, as it involves assignment letters, certificates, participant data, and accountability documentation. Consequently, potential disruptions to the primary application must be addressed through a service continuity plan (Faiz et al., 2025). In this light, an independent barcode-based digital signature (TTE Barcode) can be viewed as a form of "local redundant

Copyright at authors some right reserved this work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.

system," acting as a buffer to ensure that services remain operational even when the national system experiences an outage.

Previous research (Almira, 2024), (Putri & Handayani, 2025), (Faiz et al., 2025) has demonstrated that the SRIKANDI system enhances the effectiveness of records management, particularly regarding access speed, storage, and document distribution. The results of the current study reinforce these findings; however, this research takes a different focus by not only examining the benefits of SRIKANDI but also identifying the risks stemming from reliance on a centralized system. Thus, this study complements earlier work by addressing service continuity during system disruptions. A comparative analysis suggests that research on the digitalization of archives should shift from asking "is the application being used?" to "how resilient is the service when the application encounters a disruption?" This shift in focus is essential, as the success of a digital system should be measured not only by its performance under normal conditions but also by its capacity to withstand abnormal circumstances. The novelty of this research lies in its formulation of a "digital service continuity model" for public institutions, achieved through the implementation of an independent barcode-based digital signature (TTE Barcode). When the national SRIKANDI system became paralyzed due to an excessive load on the ANRI central server, BDK Surabaya did not regress to the inefficient manual method of using wet-ink signatures. Instead, the institution activated its own independent, barcode-based electronic signature (TTE) system—developed under the Ministry of Religious Affairs—as a mitigation bypass.

The practical implication of these findings is that BDK Surabaya needs to develop standard operating procedures (SOPs) specifically governing the use of a backup system. At a minimum, these SOPs should include criteria or indicators for activating the backup system; the designation of officials authorized to trigger the alternative system; procedures for the creation, validation, and storage of documents; protocols for securing barcodes and the identities of signatories; the logging of all documents issued during a disruption; procedures for synchronizing documents once the SRIKANDI system returns to normal; and an audit mechanism for documents issued via the backup system. Furthermore, periodic testing is essential to ensure that the backup system is not merely available on paper, but is genuinely functional in the event of a disruption.

While the use of an independent barcode-based electronic signature (TTE) may be considered an innovation, the claim of "zero-downtime" lacks support from measurable data—such as the frequency of disruptions, the duration of downtime, or the volume of documents processed. Consequently, this term should be

Copyright at authors some right reserved this work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.

replaced with "assisting in the continuity of services." Moreover, a backup system carries risks—such as document duplication, discrepancies in official correspondence numbers, difficulties in tracking archives, and potential data security vulnerabilities—if it is not formally integrated with the primary system. Therefore, this innovation requires institutional validation and a strengthening of information security measures.

C. Implications for the Quality of Public Services and Institutional Accountability.

The readiness of facilities and infrastructure at BDK Surabaya impacts two key areas: the quality of service provided to training participants and the institution's internal accountability. Digitalization—implemented through the SRIKANDI system and electronic signatures (TTE)—accelerates the issuance of documents, such as invitation letters and certificates, while ensuring that administrative records remain easily traceable. However, these benefits are occasionally hindered by server disruptions and a lack of clear procedures for backup systems.

These findings indicate that service quality depends not only on the conduct of staff but also on the reliability of administrative infrastructure. Training participants require documents that are accurate, promptly issued, and easily verifiable. When a system fails without an established contingency procedure, users immediately experience delays. Furthermore, accountability requires that documents are not merely available, but that their origins, creation timestamps, authorizing parties, and distribution processes can be substantiated through access controls and clear audit trails.

These findings align with established dimensions of service quality, specifically reliability and responsiveness. Reliability refers to an institution's capacity to provide services consistently in accordance with established procedures, while responsiveness pertains to the ability to address user needs promptly. In the context of public accountability, records serve as administrative and legal evidence; therefore, effective records management supports transparency, evaluation, and the responsible use of state budget funds (Santi et al., 2024).

The results of this study reinforce the findings of (Santi et al., 2024)that the quality of infrastructure is linked to user satisfaction. Furthermore, this study suggests that the quality of digital services is also influenced by system resilience. High-quality infrastructure is not merely defined by modernity; it must also be accessible, secure, well-maintained, and equipped with contingency systems to handle disruptions. This concept should be broadened from simple availability to encompass reliability and sustainability.

Copyright at authors some right reserved this work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.

The implications of these findings are twofold. Externally, the readiness of physical facilities and the speed of digital services impact the satisfaction of training participants. Internally, securing documents through electronic signatures (TTE) and utilizing structured official correspondence helps prevent duplication, administrative malpractice, and the loss of legal audit trails. BDK Surabaya should establish measurable indicators—such as document issuance speed, document retrieval rates, the duration of service disruptions, recovery time, and participant satisfaction levels—to evaluate the effectiveness of its digitalization efforts(Setiani et al., 1998).

As this study does not present direct data on a participant satisfaction index, the claim that it "increases participant satisfaction" should be framed more cautiously—for instance, by stating that it "has the potential to increase satisfaction by supporting service speed and reliability." Empirical validation would require the inclusion of survey data or user interviews. Additionally, since the security of backup systems has not been examined in depth, the claim of "zero-downtime" requires further substantiation through evidence of operational procedures, the legal status of electronic signatures (TTE), and the integration mechanisms with the SRIKANDI system.

D. Research Limitations and Future Research Directions

This study has limitations, as it focuses on a descriptive qualitative analysis of the Religious Training Center (BDK) in Surabaya, serving as a case study for a regional technical implementation unit. The findings cannot necessarily be generalized to other training institutions that possess different budgetary characteristics and human resource capacities. These limitations suggest that the study's findings are best understood as an in-depth exploration of a specific organizational context, rather than as a universal pattern applicable to all Religious Training Centers. Factors such as budgetary characteristics, human resource capacity, technological infrastructure, and work culture vary across institutions; therefore, mitigation strategies that proved successful at BDK Surabaya may not be directly transferable to other locations without appropriate adjustments.

In qualitative research, limited generalizability is expected, as the primary objective is to gain a profound understanding of a phenomenon within a specific context, rather than to test hypotheses statistically. Consequently, the core value of this research lies in the depth of its analysis rather than the breadth of its sample. Most prior studies on the digitalization of archives have similarly employed qualitative approaches, focusing on a single location or institution. Thus, the limitations of this study are consistent with established research patterns in the fields of educational management and public administration.

Copyright at authors some right reserved this work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.

For future research, it is recommended that subsequent studies develop quantitative analyses to measure the extent to which the use of a local barcode-based electronic signature (TTE) saves operational time during system downtime. Furthermore, future research could conduct comparative studies across all Religious Training Centers in Indonesia regarding their readiness in terms of backup infrastructure for digital archives; examine the security, legal, and operational standards of using an independent barcode-based electronic signature as a backup system; and investigate the integration of physical asset management automation with digital systems to reduce reliance on manual record-keeping.

Crucially, the limitations of this study also open up opportunities for developing a more comprehensive model of operational resilience for records administration. Future research could examine whether the mitigation model identified at BDK Surabaya can be adapted by other institutions, subject to specific modifications. Furthermore, future studies should address ethical and data security aspects, particularly concerning the use of independent electronic signatures (TTE) outside of the national system. Validating legal compliance, establishing audit mechanisms, and ensuring the protection of personal data are critical areas that require further investigation to prevent local innovations from leading to future legal complications.

CONCLUSION

This study finds that records management and infrastructure at BDK Surabaya have advanced through the implementation of the SRIKANDI digital system, although progress remains hindered by latency issues originating from the central server. The challenge posed by the failure of national digital services was successfully addressed by formulating a "standalone barcode-based digital signature" (TTE Barcode Mandiri) mitigation model, which serves as a local redundant system. The theoretical and practical implications of this research underscore that successful digital transformation cannot rely solely on centralized systems; rather, it requires operational resilience—supported by local infrastructure and technology—to ensure that the efficiency and accountability of public services remain uninterrupted. While this study is limited to the scope of BDK Surabaya and has not yet conducted an in-depth assessment of the security aspects of the backup system, its findings offer a significant direction for future research. Moving forward, it is essential to explore the integration of physical asset management automation with digital systems, as well as the development of formalized, legally-grounded operational standards for digital mitigation, so that innovations like the

Copyright at authors some right reserved this work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.

standalone barcode-based digital signature can be more broadly adopted by other government agencies.

REFERENSI

Almira, D. (2024). Penggunaan aplikasi SRIKANDI (Sistem Informasi Kearsipan Dinamis Terintegrasi) dalam proses pengelolaan arsip di Sekretariat DPRD Kota Batu. Maliki Interdisciplinary Journal (MIJ) EISSN, 2(6), 522–529. http://urj.uin-malang.ac.id/index.php/mij/index

Faiz, S., Endah, S., Erlina, W., Anang, C., & Dwi, H. (2025). Pemanfaatan aplikasi srikandi dalam pengelolaan arsip pemerintah kabupaten tulungagung. Journal of Governance and Public Administration, 2(2), 426–433.

Firmansyah, H. N., & Muzid, S. (2025). Pelatihan Penerapan Sistem E-Arsip Surat Untuk Meningkatkan Efisiensi Pengelolaan Surat Di Dpmptsp Kudus. Dedikasi: Jurnal Pengabdian Kepada Masyarakat, 5(2). https://doi.org/10.46368/dpkm.v5i2.3930

Layanan, P., Peserta, A., & Di, D. (2026). IMPLEMENTASI SISTEM KEARSIPAN DIGITAL DALAM IMPLEMENTATION OF A DIGITAL ARCHIVING SYSTEM IN STRENGTHENING STUDENT ADMINISTRATIVE SERVICES AT MIN 5 BANDA ACEH. 12(April), 68–73.

Putri, N. A., & Handayani, N. S. (2025). Efektivitas Penggunaan Sistem Srikandi dalam Pengelolaan Arsip Dinamis di Dinas Perpustakaan dan Kearsipan Kabupaten Tulungagung. Librarium: Library and Information Science Journal, 2(2), 75–90. https://journal.nurscienceinstitute.id/index.php/librarium/article/view/1987

Salma, A., Dwiki, G., & Aryono, P. (2025). Implementasi aplikasi srikandi dalam pengelolaan arsip digital di dinas perpustakaan dan kearsipan daerah kabupaten serang. Jurnal Penelitian Multidisiplin Terpadu, 9(4), 2118–7452.

Santi, S., Tomahuw, R., Hutagalung, A., & Tobing, S. H. (2024). Pengaruh Kualitas Pelayanan Dan Sarana Prasarana Terhadap Kepuasan Mahasiswa Prodi Manajemen Universitas Utpadaka Swastika. Jurnal Penelitian Manajemen, 2(2), 44–53. https://doi.org/10.70429/jpema.v2i2.137

Setiani, D. A., Rosalin, E., Administrasi, D., Fakultas, P., Pendidikan, I., & Indonesia, U. P. (1998). Jurnal Tata Kelola Pendidikan EFEKTIVITAS MANAJEMEN SARANA PRASARANA DI BALAI PELATIHAN OPERASI DAN PEMASARAN AGUS SUROTO PT.

Copyright at authors some right reserved this work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.