

## Digital Transformation of Archival Management through the SRIKANDI Application: A Study at the Banda Aceh Library and Archives Office

Cut Aulia Suci Ranosa<sup>1</sup>, Taufik<sup>2\*</sup>, Delfi Suganda<sup>3</sup>  
<sup>1-3</sup>Public Administration, UIN Ar-Raniry Banda Aceh

Email: [1210802069@student.ar-raniry.ac.id](mailto:1210802069@student.ar-raniry.ac.id); [taufik.fisip@ar-raniry.ac.id](mailto:taufik.fisip@ar-raniry.ac.id); [delfi.suganda@ar-raniry.ac.id](mailto:delfi.suganda@ar-raniry.ac.id)

\*Corresponding author: [taufik.fisip@ar-raniry.ac.id](mailto:taufik.fisip@ar-raniry.ac.id)

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### Abstract

*This study examines the digital transformation of archival management through the implementation of the SRIKANDI application at the Banda Aceh Library and Archives Office. The research is motivated by challenges in manual archival systems, including document loss risks, limited storage capacity, slow information retrieval, and low efficiency in public service delivery. This study adopts a qualitative descriptive approach, with data collected through observation, interviews, documentation, and audiovisual materials. The findings indicate that the implementation of SRIKANDI has significantly improved the efficiency, accessibility, and security of archival management by enabling digital creation, storage, retrieval, and distribution of official documents. The transformation is supported by three key dimensions: technology, organizational support, and human resources. However, several challenges remain, particularly related to technical disruptions such as instability of the national server used collectively across institutions. The study concludes that while SRIKANDI has contributed to modernizing archival governance and enhancing public service quality, further improvements in technical infrastructure, user capacity building, and institutional support are required to optimize its implementation.*

**Abstrak** Penelitian ini bertujuan untuk menganalisis transformasi pengelolaan arsip berbasis digital melalui penerapan aplikasi SRIKANDI pada Dinas Perpustakaan dan Kearsipan Kota Banda Aceh. Penelitian ini dilatarbelakangi oleh berbagai permasalahan dalam pengelolaan arsip secara manual, seperti risiko kehilangan dokumen, keterbatasan ruang penyimpanan, lambatnya proses pencarian informasi, serta rendahnya efisiensi dalam pelayanan publik. Penelitian ini menggunakan pendekatan kualitatif deskriptif dengan teknik pengumpulan data melalui observasi, wawancara, dokumentasi, dan media audiovisual. Hasil penelitian menunjukkan bahwa penerapan aplikasi SRIKANDI mampu meningkatkan efisiensi, kemudahan akses, serta keamanan dalam pengelolaan arsip melalui proses pembuatan, penyimpanan, pencarian, dan distribusi dokumen secara digital.

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Transformasi ini didukung oleh tiga dimensi utama, yaitu teknologi, organisasi, dan sumber daya manusia. Namun demikian, masih terdapat kendala teknis berupa gangguan pada server nasional yang digunakan secara bersama oleh berbagai instansi. Penelitian ini menyimpulkan bahwa aplikasi SRIKANDI berkontribusi dalam modernisasi tata kelola kearsipan dan peningkatan kualitas pelayanan publik, meskipun diperlukan peningkatan infrastruktur digital, kapasitas sumber daya manusia, serta dukungan kelembagaan untuk optimalisasi implementasinya.

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## **Introduction**

Digital transformation has become a central agenda in public sector governance, particularly in enhancing administrative efficiency, transparency, and service delivery. In the context of archival management, the transition from paper-based systems to digital platforms reflects not only technological advancement but also institutional reform that reshapes workflows and accountability mechanisms. The adoption of digital systems in government institutions is closely linked to broader e-government initiatives aimed at improving governance quality and public service performance (Heeks, 2006; Mergel et al., 2019).

Archival management holds a strategic function in ensuring institutional memory, legal accountability, and evidence-based policymaking. However, many public institutions, particularly at the local level, still encounter significant challenges in managing archives through conventional methods. These challenges include document misplacement, limited storage capacity, slow retrieval processes, and vulnerability to physical damage. Such conditions indicate a discrepancy between normative archival standards and empirical practices in government institutions (Shepherd & Yeo, 2003; Nguyen, 2013).

In response to these challenges, the Indonesian government introduced the SRIKANDI application as an integrated digital archival system to support electronic-based governance. This system is designed to facilitate document creation, classification, storage, and distribution in a digital environment. The implementation of SRIKANDI aligns with the broader digital government framework, which emphasizes efficiency, interoperability, and data security in public administration (Mergel et al., 2019; Kettunen & Kallio, 2019).

Despite its strategic importance, the implementation of digital archival systems often faces various obstacles, including technological limitations, organizational resistance, and insufficient human resource capacity. Previous studies on digital transformation in the public sector have predominantly focused on general e-government adoption and service innovation. However, limited research has specifically addressed digital transformation in archival management, particularly in local government contexts. Moreover, existing studies tend to emphasize technological aspects while underestimating the role of organizational and human factors in determining implementation success (Dunleavy et al., 2006; Gil-Garcia et al., 2018).

To highlight this research gap, the following table compares previous studies with the focus of this research:

Aspect	Previous Studies	This Study
Research Focus	General e-government and digital services	Digital archival management transformation
Object of Study	Various public sector institutions	Banda Aceh Library and Archives Office
Analytical Approach	Technology-oriented	Integrated approach: technology, organization, and human resources
Identified Challenges	Adoption and infrastructure	Technical disruptions, human capacity, and institutional support
Contribution	Broad understanding of digital governance	Specific insights into archival system transformation using SRIKANDI

The table demonstrates that this study provides a more specific and empirical contribution by focusing on archival management transformation within a local government institution. It emphasizes the interaction between technology, organizational readiness, and human resources as key determinants of successful digital transformation (Vial, 2019).

The Banda Aceh Library and Archives Office serves as a relevant case study, as it has implemented the SRIKANDI application to modernize its archival practices. Previously, the institution relied on manual systems that were inefficient and prone to errors. The transition to a digital system provides an opportunity to evaluate both the benefits and the challenges of implementing digital archival management in practice. Understanding this transformation is essential for developing effective strategies to strengthen digital governance in the public sector (Gil-Garcia et al., 2018; Vial, 2019).

This study aims to analyze the digital transformation of archival management through the implementation of the SRIKANDI application at the Banda Aceh Library and Archives Office. It seeks to examine how digitalization improves efficiency, accessibility, and security, as well as to identify the challenges encountered during implementation. By addressing these issues, this research contributes to the development of a more comprehensive understanding of digital archival governance and provides practical implications for policy and institutional improvement.

## Research Method

This study employs a qualitative descriptive approach to analyze the digital transformation of archival management through the implementation of the SRIKANDI application at the Banda Aceh Library and Archives Office. A qualitative approach is considered appropriate as it allows for an in-depth understanding of social phenomena, organizational processes, and user experiences within a real institutional context. This

method focuses on interpreting meanings, identifying patterns, and exploring the dynamics of digital transformation in archival practices. The descriptive orientation is used to systematically present empirical findings related to technology adoption, organizational readiness, and human resource capacity. By applying this approach, the study seeks to provide a comprehensive and contextual analysis of the implementation process (Creswell & Creswell, 2018; Moleong, 2017).

The research site was selected purposively, considering that the Banda Aceh Library and Archives Office has actively implemented the SRIKANDI application as part of its digital transformation initiative. Informants were determined using purposive sampling techniques, targeting individuals who are directly involved in archival management and the use of the SRIKANDI system. These include archival staff, administrative officers, and relevant stakeholders within the institution. The selection of informants is based on their knowledge, experience, and role in the implementation process. This strategy ensures that the data collected is relevant, credible, and reflective of actual practices within the organization (Sugiyono, 2019; Patton, 2015).

Data collection was conducted through multiple techniques, including observation, in-depth interviews, documentation, and audiovisual materials. Observation was used to examine the workflow and practical use of the SRIKANDI application in daily archival activities. In-depth interviews were carried out to capture informants' perspectives regarding the benefits, challenges, and impacts of digital transformation. Documentation techniques involved reviewing institutional records, reports, and policy documents related to archival management. The use of multiple data sources enables triangulation, which enhances the validity and reliability of the research findings (Yin, 2018; Creswell & Creswell, 2018).

Data analysis was performed using an interactive model that includes data reduction, data display, and conclusion drawing. The process began with organizing and categorizing raw data obtained from the field, followed by identifying key themes related to digital transformation dimensions such as technology, organization, and human resources. Data were then presented in a structured and systematic manner to facilitate interpretation. Finally, conclusions were drawn based on patterns and relationships identified in the data, ensuring consistency with the research objectives. To ensure data credibility, this study applied validation techniques such as source triangulation and member checking, which strengthen the trustworthiness of qualitative findings (Miles et al., 2014; Yin, 2018).

## **Results and Discussion**

### **Digital Transformation in Archival Management Practices**

The implementation of the SRIKANDI application has significantly transformed archival management practices at the Banda Aceh Library and Archives Office. Prior to digitalization, archival processes relied heavily on manual and paper-based systems, which were often inefficient and prone to errors. These conditions align with previous findings that conventional archival systems tend to limit efficiency and increase the risk of document

mismanagement (Shepherd & Yeo, 2003; Nguyen, 2013). The shift toward a digital platform represents a strategic response to these challenges, enabling more systematic and structured archival processes.

Empirical findings show that digital transformation has improved workflow efficiency, particularly in document creation, classification, and distribution. The SRIKANDI system allows for automated processes that reduce administrative delays and minimize redundancy. This supports the argument that digital technologies can streamline bureaucratic procedures and enhance organizational performance (Mergel et al., 2019; Vial, 2019). As a result, archival management becomes more responsive to institutional needs.

Accessibility is another critical dimension that has improved following the implementation of SRIKANDI. Digital archives can now be accessed by authorized users without physical constraints, facilitating faster information retrieval and inter-departmental coordination. This finding is consistent with studies emphasizing that digital systems improve information accessibility and transparency in public administration (Gil-Garcia et al., 2018; Kettunen & Kallio, 2019). Consequently, the institution is better equipped to support timely decision-making processes.

In terms of security, digital archival systems offer stronger protection compared to manual methods. The use of authentication mechanisms and controlled access ensures that sensitive information is safeguarded against unauthorized use. This aligns with previous research highlighting the importance of digital security in maintaining data integrity and accountability (Dunleavy et al., 2006; Vial, 2019). Therefore, the implementation of SRIKANDI contributes to strengthening institutional trust and governance.

Despite these improvements, technical challenges remain evident, particularly in relation to system performance and server reliability. Occasional disruptions hinder the smooth execution of archival activities, reflecting broader issues in digital infrastructure. Similar challenges have been identified in studies of e-government implementation, where technological limitations can affect system effectiveness (Heeks, 2006; Mergel et al., 2019). Addressing these issues is essential to ensure sustainability.

The transformation process has also influenced organizational culture. Employees are gradually adapting to digital workflows, developing new competencies, and shifting their mindset toward technology-driven practices. This supports the notion that digital transformation involves not only technological change but also cultural and behavioral adaptation within organizations (Vial, 2019; Gil-Garcia et al., 2018). Such changes are critical for long-term success.

Furthermore, the integration of SRIKANDI enhances interoperability among government institutions, allowing for more efficient data exchange and coordination. This aligns with the principles of digital governance, which emphasize interconnected systems and collaborative administration (Kettunen & Kallio, 2019; Mergel et al., 2019). As a result, archival management becomes more aligned with national digital transformation goals.

The following table summarizes the transformation in archival management practices:

Aspect	Before SRIKANDI	After SRIKANDI
Document Creation	Manual and paper-based	Digital and automated
Storage System	Physical archives	Electronic storage
Retrieval Process	Time-consuming	Fast and efficient
Accessibility	Limited	Flexible and online
Security	Vulnerable	Controlled and secure

Overall, the implementation of SRIKANDI demonstrates a significant advancement in archival management practices, although continuous improvements in infrastructure and system reliability are still required.

### Organizational and Human Resource Readiness

Organizational readiness is a key determinant in the success of digital transformation initiatives. The Banda Aceh Library and Archives Office demonstrates strong institutional commitment through leadership support and policy alignment. Leadership plays a crucial role in driving digital initiatives and ensuring organizational adaptation (Mergel et al., 2019; Vial, 2019). This support creates a conducive environment for implementing the SRIKANDI application.

Empirical findings indicate that leadership actively promotes the adoption of digital systems, encouraging employees to integrate SRIKANDI into daily workflows. This aligns with studies that highlight leadership as a critical factor in facilitating technological change (Gil-Garcia et al., 2018; Dunleavy et al., 2006). Without such support, digital transformation efforts are likely to encounter resistance.

Human resource capacity remains a significant factor influencing implementation. While some employees demonstrate adequate digital skills, others face difficulties adapting to the system. This variation affects overall performance and reflects broader challenges in digital literacy within public institutions (Heeks, 2006; Kettunen & Kallio, 2019). Therefore, capacity building becomes essential.

Training programs have been implemented to enhance employee competencies in using the SRIKANDI application. These programs focus on technical skills and system understanding, contributing to improved performance. However, their effectiveness varies depending on participants' prior experience (Creswell & Creswell, 2018; Patton, 2015). Continuous training is necessary to ensure consistent skill development.

Resistance to change is another challenge identified in this study. Some employees are reluctant to transition from manual to digital systems due to familiarity with traditional practices. This finding supports previous research indicating that organizational change often encounters behavioral resistance (Vial, 2019; Heeks, 2006). Addressing this issue requires both technical and cultural strategies.

Despite these challenges, most employees show a positive attitude toward digital transformation. They recognize the benefits of increased efficiency and reduced workload, which encourages adoption. This reflects a gradual shift toward a digital organizational culture (Gil-Garcia et al., 2018; Mergel et al., 2019).

Infrastructure availability also influences implementation success. Adequate facilities, such as computers and internet connectivity, support system usage. However, limitations in infrastructure still pose constraints, particularly during technical disruptions (Kettunen & Kallio, 2019; Heeks, 2006). The following table summarizes organizational and human resource readiness:

<b>Factor</b>	<b>Condition</b>	<b>Impact</b>
Leadership Support	Strong	Facilitates adoption
Employee Skills	Varied	Affects efficiency
Training Programs	Ongoing	Improves capacity
Resistance	Moderate	Slows transition
Infrastructure	Adequate	Supports implementation

In conclusion, organizational and human resource readiness significantly shape the success of SRIKANDI implementation, requiring continuous improvement in training, infrastructure, and change management.

### **Challenges and Limitations of SRIKANDI Implementation**

The implementation of the SRIKANDI application faces several challenges that affect its effectiveness. One of the most significant issues is the instability of the national server, which disrupts system accessibility and delays document processing. This reflects common challenges in centralized digital systems (Heeks, 2006; Mergel et al., 2019).

Server disruptions highlight the dependency on national infrastructure, limiting local control over system performance. When the system experiences downtime, archival activities are temporarily halted. This finding is consistent with previous studies emphasizing the importance of reliable infrastructure in digital governance (Kettunen & Kallio, 2019; Dunleavy et al., 2006).

Technical issues also arise in system operation, including software errors and user difficulties. Limited technical support exacerbates these problems, reducing efficiency. Such challenges are frequently reported in digital transformation studies (Vial, 2019; Gil-Garcia et al., 2018).

Human resource limitations further complicate implementation. Employees with lower digital literacy struggle to utilize the system effectively, leading to inconsistencies. This aligns with research highlighting the importance of digital skills in technology adoption (Heeks, 2006; Nguyen, 2013).

Organizational coordination is another challenge, as effective implementation requires integration across departments. Weak coordination can result in fragmented data management and inefficiencies (Mergel et al., 2019; Gil-Garcia et al., 2018). The transition process itself also presents difficulties, as employees must adapt to new workflows. This adjustment period may temporarily reduce productivity, which is a common phenomenon in organizational change (Vial, 2019; Dunleavy et al., 2006).

Infrastructure limitations, including budget constraints and equipment availability, further affect implementation. Adequate resources are necessary to support digital systems and ensure optimal performance (Kettunen & Kallio, 2019; Heeks, 2006). The following table summarizes key challenges:

Challenge	Description	Impact
Server Instability	Frequent downtime	Delays
Technical Issues	System errors	Reduced efficiency
HR Limitations	Low skills	Inconsistent use
Coordination	Weak integration	Data fragmentation
Infrastructure	Limited resources	Performance constraints

In conclusion, addressing these challenges requires a comprehensive approach that integrates technological improvements, human resource development, and organizational coordination.

## Conclusion

This study concludes that the implementation of the SRIKANDI application has significantly contributed to the digital transformation of archival management at the Banda Aceh Library and Archives Office. The transition from manual to digital systems has improved efficiency in document processing, enhanced accessibility through electronic retrieval, and strengthened data security through controlled access mechanisms. These findings confirm that digital archival systems can modernize administrative practices and support more effective public service delivery. The transformation also reflects broader shifts in governance toward technology-driven systems and integrated information management.

However, the study also reveals that the success of digital transformation is not solely determined by technological adoption. Organizational readiness and human resource capacity play equally important roles in ensuring effective implementation. Strong leadership support, institutional commitment, and the availability of infrastructure have facilitated the adoption process. At the same time, variations in digital literacy, resistance to change, and limited technical competencies among staff remain key challenges that affect the consistency of system utilization. These findings indicate that digital transformation must

be approached as a holistic process involving technological, organizational, and human dimensions.

In addition, technical challenges, particularly related to server instability and system performance, continue to hinder optimal implementation. The reliance on centralized national infrastructure creates vulnerabilities that can disrupt local operations. This suggests that improving system reliability and ensuring adequate technical support are critical for sustaining digital transformation initiatives. Without addressing these issues, the potential benefits of digital archival systems may not be fully realized.

From a theoretical perspective, this study contributes to the literature on digital transformation in the public sector by providing empirical evidence from the specific context of archival management. It extends existing research by demonstrating the importance of integrating technology with organizational structures and human resource capabilities. The findings support the view that digital transformation is a multidimensional process that requires alignment across various institutional components.

From a practical perspective, several policy implications can be drawn. First, government institutions should strengthen digital infrastructure, particularly by improving server capacity, system stability, and backup mechanisms to ensure continuity of services. Second, continuous capacity-building programs are needed to enhance employees' digital competencies and reduce resistance to change. Training should be designed not only to improve technical skills but also to foster a digital mindset among staff.

Third, institutional support should be reinforced through clear policies, standard operating procedures, and inter-departmental coordination mechanisms. Effective governance frameworks are essential to ensure that digital systems are implemented consistently across organizational units. Fourth, the government should consider decentralizing certain aspects of system management to reduce dependency on centralized infrastructure and improve responsiveness to local needs.

Finally, future research is recommended to explore comparative studies across different regions or institutions to provide a broader understanding of digital archival transformation in the public sector. Quantitative approaches may also be employed to measure the impact of digital systems on organizational performance and service quality. By addressing these areas, further studies can contribute to strengthening digital governance and enhancing the effectiveness of public administration in the digital era.

Overall, this study highlights that while the SRIKANDI application has successfully initiated digital transformation in archival management, sustained efforts in infrastructure development, human resource capacity building, and institutional strengthening are essential to achieve long-term success and maximize its impact.

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