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Static archive management through national archival information systems at Universitas Sumatera Utara

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Abstract

Background: Higher education institutions necessitate dependable archival information systems to maintain static archives, safeguard institutional memory, and enhance access to archival information. Universitas Sumatera Utara employs the National Archival Information System (SIKN) to enhance the management of static archives. Concurrently, the National Archival Information Network (JIKN) serves as a public access network for archival information that is processed via SIKN.
Purpose: This study seeks to investigate the application of SIKN in the management of static archives at the Archives Office of Universitas Sumatera Utara and to elucidate its connection with JIKN as a platform for public access.
Methods: This research utilized a qualitative case study approach. Informants were chosen using purposive sampling, comprising two staff members who are directly engaged in the management of static archives via SIKN and JIKN. Data were gathered using comprehensive interviews, direct observation, and thorough documentation. Data analysis encompassed the processes of data reduction, data presentation, and the formulation of conclusions. The validity of the data was assessed through the triangulation of sources, methods, and documents.
Results: The findings indicate that static archive management via SIKN involves multiple stages, which encompass archive submission, verification, classification, media conversion, watermarking, metadata entry, digital object upload, backup, and public access through JIKN. SIKN facilitates the management of internal archives, focusing on archival description, metadata entry, and the administration of digital objects. In contrast, JIKN offers public access to a curated selection of archival information. The implementation encounters multiple constraints, such as restricted human resources, prolonged processing times, issues with network reliability, reliance on ANRI for technical system management, insufficient backup infrastructure, and gaps in metadata components.
Conclusions: SIKN facilitates a structured approach to static archive management at Universitas Sumatera Utara, whereas JIKN enhances public accessibility to archival information that is processed via SIKN.

Keywords:
Static archives
Archival information systems
Digital preservation
University archives
Records management

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INTRODUCTION

Effective management of static archives in higher education institutions necessitates a structured archival information system, as universities consistently generate records that hold significant long-term historical, administrative, legal, and scientific importance. Static archives are not utilized in routine administrative tasks; however, it is essential to uphold their authenticity, security, organization, and accessibility. In this context, university archives serve as more than just administrative documents; they function as a repository of institutional memory that captures policies, academic activities, scientific advancements, and the historical continuity of the institution.

The evolution of information technology has prompted archival institutions to transition from traditional archive management to a digital-centric approach in archival management. Traditional archive management encounters numerous challenges, such as restricted storage capacity, the potential for physical degradation, and obstacles in accessing archival data. Digitization via media transfer has emerged as a crucial approach to preserving the integrity of archival materials while enhancing access to archival information. Previous studies indicate that digital technology has the potential to enhance the efficiency of archival services, facilitate the preservation of archives, and bolster organizational accountability (Adeline et al., 2025; Arafat et al., 2025; Rukmana et al., 2024; Soraya et al., 2023).

In Indonesia, the National Archival Information System (SIKN) and the National Archival Information Network (JIKN) function as critical tools for the management of digital archives and the facilitation of public access to archival information. SIKN operates as a system designed for the management of archival data and digital archival objects, whereas JIKN serves as a public access network that facilitates access to archival information processed via SIKN. Consequently, the implementation of SIKN and JIKN should be comprehended not merely as the application of information technology, but as an integral component of the archival workflow. This workflow encompasses various stages, including archive submission, verification, classification, media transfer, metadata input, digital object upload, preservation, and access provision (ANRI, 2019; Kasman et al., 2025; Wahyuningtyas et al., 2025).

Universitas Sumatera Utara stands out as a higher education institution that possesses a considerable collection of institutional archives deemed to have long-term value. These archives encompass a range of strategic policy documents, leadership decisions, activity reports, academic documentation, scientific documentation, and records of institutional activities. As of 2023, the Archives Office of Universitas Sumatera Utara has established a connection with SIKN and JIKN, operating under the coordination of the National Archives of the Republic of Indonesia. Through this involvement, Universitas Sumatera Utara effectively manages its institutional archives while also engaging in the national archival information network (Ginting & Khairifa, 2023).

The Archives Office of Universitas Sumatera Utara received recognition as the Best National Network Node in July 2025 from the National Archives of the Republic of Indonesia for its management of SIKN and JIKN. This achievement demonstrates that Universitas Sumatera Utara possesses pertinent institutional expertise in the management of digital archives via the national archival information system. However, this achievement warrants a more thorough examination of the operational process involved in static archive management, specifically focusing on the utilization of SIKN for managing static archives and the role of JIKN in facilitating public access to archival information processed via SIKN.

The application of SIKN in static archive management extends beyond merely uploading digital files into a system. Static archive management involves a systematic approach that encompasses several key procedures. These include the submission of archives from creator units, verification of archive eligibility, classification, media transfer, watermarking, metadata input, digital object upload, backup, and facilitating public access through JIKN. In the absence of well-defined archival procedures, digital archives may exist within the system yet pose significant challenges in terms of identification, interpretation, retrieval, and effective utilization. Consequently, the implementation of SIKN should be analyzed within the context of static archive management, rather than solely considering its role in digital storage.

Numerous prior studies have examined the process of archive digitization and the application of SIKN across various institutional settings. Indah et al. (2024), demonstrated that SIKN facilitates static archive management by effectively addressing the stages of acquisition, processing, storage, and archival services. Kurniawan et al. (2024), identified that the implementation of SIKN continues to encounter obstacles concerning human resources, infrastructure, internet connectivity, and the availability of archives. Wahyuningtyas et al. (2025), articulated that user satisfaction, system quality, and digital capability are critical factors that affect the success of implementing a digital archiving system. However, research focusing on the application of SIKN in static archive management within higher education archival institutions is scarce, especially in those affiliated with the national archival information network and acknowledged for their management of SIKN and JIKN.

This study examines the use of SIKN in managing static archives at the Archives Office of Universitas Sumatera Utara, with JIKN serving as a public access network linked to the archival information processed via SIKN. The uniqueness of this study is found in its examination of the operational workflow associated with static archive management within a higher education institution. This encompasses various processes such as archive submission, verification, classification, media transfer, metadata input, digital object upload, backup, and the provision of public access. This study not only elucidates the existence of SIKN and JIKN, but also investigates the connections between both systems and the practical stages of static archive management.

Consequently, this study seeks to investigate the application of the National Archival Information System in facilitating static archive management at the Archives Office of Universitas Sumatera Utara, while also elucidating its connection to the National Archival Information Network as a platform for public access. The findings are anticipated to enhance the field of archival studies within higher education and offer practical insights into the optimization of static archive management via national archival information systems.

RESEARCH METHODS

This study utilized a qualitative case study design to investigate the implementation of the National Archival Information System (SIKN) in the management of static archives at the Archives Office of Universitas Sumatera Utara. A qualitative case study design was chosen due to the research's emphasis on a particular institutional setting, aiming to gain a comprehensive understanding of archival practices, management procedures, workflow, and the context of implementation. This design is pertinent as the study focuses not on the statistical measurement of variables, but rather on comprehending the application of SIKN in real archival practices within a higher education institution (Adeline et al., 2025; Indah et al., 2024; Setyawan, 2025).

This study was carried out at the Archives Office of Universitas Sumatera Utara, situated at Jl. Perpustakaan No. 3, Padang Bulan, Medan Baru, Medan City, North Sumatra. Data collection occurred between January 23 and April 20, 2026. This phase encompassed the preliminary assessment of archive management operations, analysis of relevant documentation, scrutiny of archival methodologies, and in-depth interviews. The primary interview took place on March 11, 2026, involving informants who were directly engaged in the management of static archives via SIKN and JIKN.

The selection of informants was conducted through purposive sampling. This technique was employed due to the necessity for informants possessing direct experience, technical knowledge, and work responsibilities pertinent to static archive management at the Archives Office of Universitas Sumatera Utara. The criteria for selecting informants encompassed direct engagement in the management of digital-based static archives, comprehension of archival management procedures within SIKN and JIKN, awareness of the interrelationship between SIKN and JIKN, and accountability for overseeing static archives within the institution.

This research included two informants. The first informant, L.U., participated in archive disposition and management, whereas the second informant, F.C.Z.H., was engaged in promotion systems and archive management. The number of informants was deemed sufficient as this study sought to gain a comprehensive understanding of the archival management process within a particular institutional context, rather than to generate statistical generalizations. The selection of the two informants was based on their relevant positions and direct involvement in the processing, input, storage, and management of static archives via SIKN and JIKN.

The research utilized both primary and secondary data sources. Primary data were collected via in-depth interviews and direct observation at the Archives Office of Universitas Sumatera Utara. The interviews aimed to investigate the use of SIKN, the processes involved in managing static archives, the difficulties faced during system implementation, and the connection between SIKN as an internal archive management system and JIKN as a public access network. Observation was carried out in a direct and non-participatory manner, indicating that the researcher monitored archival activities without engaging in decision-making or implementing archival management processes. The use of interviews, observation, and documentation is pertinent in qualitative archival research as these techniques enable researchers to thoroughly investigate institutional practices, archival workflows, and the context of digital archive management (Indah et al., 2024; Rukmana et al., 2024; Soraya et al., 2023).

The activities observed comprised archive submission, verification of archive eligibility, classification, media transfer, application of watermarks, entry of metadata, uploading of digital objects into SIKN, data backup, and provision of public access to archival information via JIKN. These aspects were examined to analyze the process of static archive management both prior to and following the entry of archival information into the system. Consequently, the study explored not only the technical application of SIKN but also the archival workflow that underpins the system.

Secondary data were sourced from various supporting research documents, which encompassed archival regulations, archive management guidelines, institutional documentation, SIKN and JIKN system displays, archive lists or descriptions, institutional reports, and pertinent scientific literature concerning static archive management, archive digitization, and archival information systems. These documents served to substantiate and confirm the information gathered from interviews and observations. The utilization of supporting documents holds significant importance, as research within archival systems necessitates a consistent alignment among field information, institutional evidence, and the regulatory context (ANRI, 2019; Ginting & Khairifa, 2023).

The data analysis adhered to the interactive qualitative data analysis framework established by Miles and Huberman, including data reduction, data presentation, and conclusion drawing or or verification (Miles & Huberman, 1994). This analytical procedure is pertinent to qualitative archival research as it allows researchers to systematically categorize data from interviews, observations, and documentation into thematic findings concerning institutional practices, archival workflows, and digital archive management (Indah et al., 2024; Rukmana et al., 2024; Setyawan, 2025). In the data reduction phase, the outcomes from interviews, observational notes, and pertinent documentation were methodically curated and arranged in alignment with the study objectives. The retained data included information on SIKN use, the process of

static archive management, the interaction between SIKN and JIKN, challenges faced during implementation, and the validity of archival management procedures. In the data presentation phase, the results were structured in narrative and thematic formats to demonstrate the relationship between archive processes and system use. In the conclusion drawing and verification phase, the researcher analysed patterns and meanings from the data to elucidate the function of SIKN in enhancing static archive management at the Archives Office of Universitas Sumatera Utara.

Data validity was assessed by employing source, method, and document triangulation. Source triangulation was performed by analysing the information gathered from Informant 1 and Informant 2, each of whom held distinct roles in archive management. Method triangulation was performed by analysing data obtained from interviews, direct observation, and documentation. Document triangulation was performed by aligning the findings from interviews and observations with institutional documents, archival regulations, and the displays from the SIKN and JIKN systems. In this process, the validity of the data was established not only through informant statements but also corroborated by field evidence and pertinent documents (Setyawan, 2025).

RESULTS AND DISCUSSION

Management of static archives at the Archives Office of the Universitas Sumatera Utara through SIKN

The research results show that the Archives Office of the Universitas Sumatera Utara Sumatra uses the National Archival Information System (SIKN) to manage static archives. SIKN manages archives that have undergone the appraisal process, are no longer used in active administrative activities, and have permanent value. This indicates that SIKN is used as a tool to support the management of static archives, not as a system for the university's overall archives. "And not everything is submitted, for dynamic archives not everything goes into SIKN, but static ones can go into SIKN," said Informant 1 (Indah et al., 2024; Rizki & Putra, 2025).

The results show that the use of SIKN does not start with the document upload process, but with the static archive management flow carried out in stages. The results show that the use of SIKN does not start with the document upload process,

Table 1. Informants' data

No.	Name Initial	Profession	Initial in Article
1.	L.U.	Archive disposition and archive management staff	Informant 1
2.	F.C.Z.H.	Promotion systems and archive management staff	Informant 2

Source: Research documentation, 2026.

but with the static archive management workflow carried out in stages. These stages include archive submission, archive list preparation, verification, determination of static archive status, classification, media transfer, watermark application, metadata input, digital object upload, backup, and provision of information access through JIKN. Thus, SIKN does not replace the archiving process (Kurniawan et al., 2024; Wahyuningtyas et al., 2025).

The diagram shows the systematic workflow used to manage static archives through SIKN. Each stage has management tasks that are interconnected. The submission and verification process ensures that the documents are eligible. The classification and processing stages organise the documents according to their origin and type. The stages of media transfer and watermarking, as well as metadata input and digital object upload, insert archive information into SIKN; and the backup and public access stages provide archive information to users through JIKN.

Table 2 shows that the management of static archives through SIKN is not only related to technological functions but also to the stages of archive management. Archive managers must make decisions at each stage, from determining the

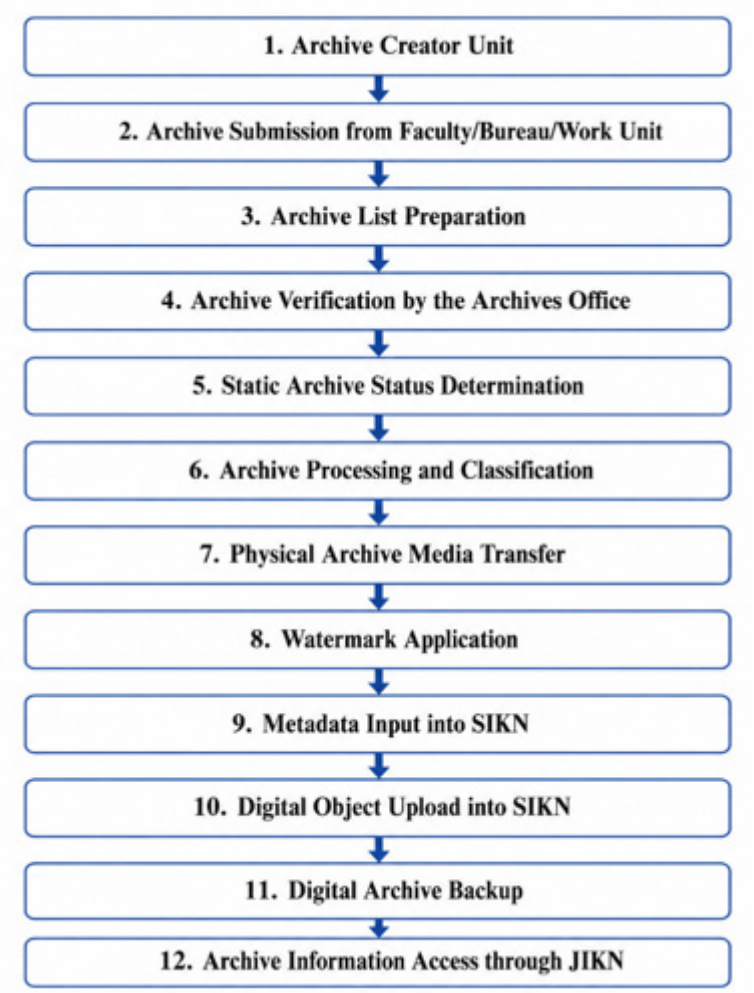

Figure 1. Flowchart of the SOP for managing static archives through SIKN at the Archives Office of the Universitas Sumatera Utara

Source: Research findings, 2026

Table 2. Stages of static archive management through SIKN at the Archives Office of the Universitas Sumatera Utara

Stage	Activity	Research Findings
Archive submission	The Archive Office receives archives from the creator unit.	Archives from faculties, bureaus, or work units must be accompanied by an archive list.
Verification	The officer checks the status and eligibility of the archives.	Only archives verified as static archives are processed into SIKN.
Classification	Before being entered into the system, the archives are sorted and categorized.	Although classification is done during the processing, it does not enter the SIKN metadata.
Media transfer	Physical archives are converted into digital files.	Photos are scanned, documents are converted to PDF, and videos are extracted from physical media.
Watermark	The digital file is marked with the institution's identity.	Watermarking is done before the file is uploaded to SIKN.
Input metadata	The officer fills in the basic archive information.	Metadata includes the title, year, date, number of pages, creator, and unique code.
Upload to SIKN	Digital objects are entered into the system.	SIKN is used as a medium for uploading and storing static archives.
Digital preservation.	The digital file is stored as a backup.	Backup is done through Google Drive and hard disk.
Public access	Archives can be accessed by users.	JIKN is used as a public search and access network.

Source: Research findings, 2026

feasibility of the archives to ensuring that the archives can be retrieved. Therefore, discussions about the utilization of SIKN should be conducted within the framework of static archive management, not just within the framework of information system functions (Indah et al., 2024; Rizki & Putra, 2025).

Submission and verification of static archives

The Archive Office of Universitas Sumatera Utara begins the management of static archives by receiving documents from the archive-creating unit. The archive-creating unit can originate from faculties, bureaus, or other work units within the university. As a basis for administrative review before the archives are submitted, the archive-creating unit compiles an archive list. This list helps the staff identify the origin and type of the archives as well as the suitability of the archives for further processing.

Archives are submitted through administrative and verification stages, according to Informant 1: "There is a submission process from the faculty through our bureau; they make an archive list. After that, we verify it before it can be submitted, then there will be a submission report." As shown in this quote, the

archives are not directly entered into SIKN after being received. Archives must undergo a verification process first to ensure their status and eligibility.

Because not all submitted documents can be processed immediately as static archives, documents that are still used in active administrative activities are still categorised as dynamic archives. Therefore, the Archive Office must ensure that the documents entered into SIKN have permanent value. This process shows that the use of SIKN still relies on the basic principles of static archive management: sorting, appraisal, and control of archives before they are managed digitally.

Therefore, the submission and verification stage not only serves as an administrative procedure; it also functions as a control mechanism to ensure that only qualified archives can be processed in the next stage. In this context, SIKN does not serve as a substitute for the archival verification process; rather, it functions as a supporting system after the archives have gone through the archival management process (Padoni et al., 2024; Rizki & Putra, 2025).

Organization and initial processing of archives

After the archives are deemed eligible, the next stage is the processing and classification of the archives. This stage is important because static archives cannot be understood merely as digital files. Classification is carried out to group the archives based on type, origin of the creator, form of media, and their institutional context. Archives must maintain their original context, institutional function, and their relationship with preceding activities.

The interview results show that sorting, verification, and classification are part of the archival processing stages before being entered into SIKN. Informant 1 explained the archival processing process, stating: “The archival process in question must include sorting, verification, and classification of the archives,” which indicates that classification is part of the archival processing and is not included in the metadata features available in SIKN.

In this study, it was found that basic information such as title, year, date, number of pages, archive creator, and unique code are the only elements included in the SIKN metadata. Informant 1 stated that archive classification is not included in the SIKN metadata. This indicates that there is a difference between the classification process used to process archives and the metadata available in the system.

This condition indicates that the archive managers are still conducting the classification process as part of static archive management. However, the classification results have not yet been fully integrated into the SIKN metadata, so the staff managing static archives through SIKN must remain cautious in maintaining the relationship between physical archives, media transfer results, archive descriptions, and the information entered into the system. If their relationships are not maintained, digital archives can be stored in the system; however, their archival context becomes less complete (Borlund et al., 2024; Matusiak, 2022).

Media transfer and preparing digital objects

Physical archives must be converted first before they can be uploaded to SIKN; research results show that the archives managed through SIKN at the Archives Office of the Universitas Sumatera Utara generally originate from physical archives. Photo and text archives must be converted into PDF files, and video archives must be extracted from physical media before they can be processed as digital files (Rukmana et al., 2024; Soraya et al., 2023).

According to Informant 1, "Yes, that's correct, the archives are managed after going through the physical media transfer process." If the image is scanned, then the document file is in PDF. This shows that SIKN does not receive archives directly. Before the archives can be entered into the system, they must be converted into digital objects. This process is crucial for static archive management as it connects digital management with physical archives.

Furthermore, the research shows that there are no archives that were originally in digital form and were directly uploaded to SIKN. Therefore, archives originating from digital systems such as e-office and correspondence management are still categorized as dynamic archives because they are still related to ongoing administrative activities. Physical archives that are entered into SIKN still come from physical archives that have undergone media transfer, as SIKN at the Universitas Sumatera Utara Archives Office is currently used for static archives, so newer digital archives cannot be uploaded to SIKN, as explained by Informant 1.

Media transfer in audiovisual archives requires special care. To extract video tapes, specific playback devices must be used, as explained in Informant 1. In cases where the device is not accessible in the office, the extraction process may involve a third party that possesses the device. Only after the extraction results in a digital file can the file be processed and uploaded to SIKN. This result shows that media transfer is not just a technical action; it is part of a strategy for preserving static archives so that data on old media can be salvaged and utilised (Herdianto et al., 2022; Shekgola & Ngoepe, 2026).

Digital objects are watermarked before being uploaded to SIKN. According to informant 1, "And it has already been watermarked. Only then is it uploaded on SIKN," the watermark is used to prevent file duplication. This stage shows that the preparation of digital objects not only focuses on changing the archive format but also on maintaining institutional identity and controlling the use of digital archives.

Uploading digital objects to SIKN and enter metadata.

After the archives undergo the media transfer and watermarking process, the next step is to input the metadata into the SIKN and upload the digital objects. This metadata serves as basic information that explains the identity of the archives within the system, and based on the interview results, it includes the archive title, archive year, archive date, number of pages or sheets in the archive, and a unique code.

According to Informant 1, "Later in the SIKN, the form will also include the title, the year of the archive, the date of the archive, and the number of pages of the

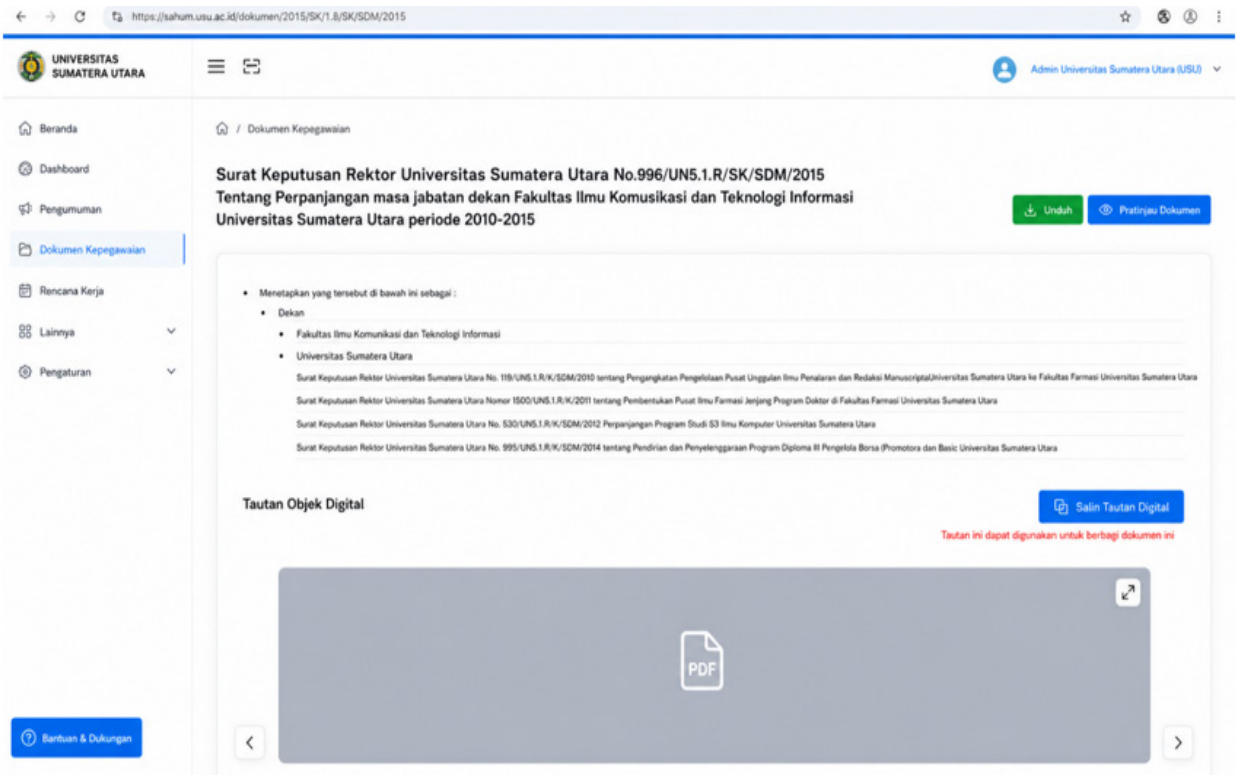

Figure 2. The interface of SIKN in the context of archival description and the process of digital object upload at Universitas Sumatera Utara.

Source: Research documentation, 2026.

archive." Additionally, Informant 2 added, "So it's just the title, the year of the archive, the page number, and the creator from USU. That's it." Furthermore, Informant 2 added that there is a unique code. This code does not originate from the archive classification; rather, it is a sequential number created by the archive manager for internal identification purposes.

SIKN is used to upload digital objects and enter archive descriptions, as shown in Figure 2. Uploading digital objects is not the initial stage of archive management; it is an advanced stage after the archives are deemed eligible and ready to be managed digitally.

The results show that the metadata in SIKN at the Archives Office of Universitas Sumatera Utara is still basic and helps the process of identifying archives, but it does not yet fully include the context of archive classification. In the management of static archives, the context of the archives is important because it helps users understand the origin, function, and relationship with institutional activities. As a result, archive managers must ensure that the information in SIKN is accurate, consistent, and easy to understand (Borlund et al., 2024; Matusiak, 2022).

Preservation and conservation of digital documents

Research shows that the Archives Office of Universitas Sumatera Utara not only stores archives in SIKN but also backs them up on Google Drive and hard disks. Thus, the preservation of digital archives becomes an important part of static archive management in SIKN. This

step is taken to ensure that digital archives remain accessible and to reduce the risk of data loss.

"Our storage is mostly on drives, Google Drive, and hard disks. That's it," said Informant 1. Additionally, he explained that files saved on Google Drive are periodically transferred to the hard disk. PDF files, photos, and videos are included in the backed-up files. Data is also stored on the hard disk, according to Informant 2. Informant 1 manages text archives, and Informant 2 manages photo and video archives. The backup tasks are divided based on the type of archive.

This backup demonstrates efforts in local digital preservation. The Archive Office strives to ensure that digital files remain available, even in the event of issues with certain systems or storage media. However, the digital preservation infrastructure is still basic, as evidenced by the use of hard disks and Google Drive. Although these methods are useful in the short term, they still require improvements in the form of more organized backup procedures, regular file condition checks, and more sustainable storage media management (Herdianto et al., 2022; Shekgola & Ngoepe, 2026).

In addition to local backups, the preservation of digital archives is related to the status of SIKN as a national system managed by ANRI. The Archives Office of the Universitas Sumatera Utara cannot directly repair the system if there is damage, data loss, or disruptions in the SIKN application. As stated by Informant 1, "If there is damage or data deletion or error or any trouble with the system, we report it to ANRI," indicates that university archive managers and national system managers must collaborate to manage digital archives through SIKN (ANRI, 2019; Herdianto et al., 2022).

Public access through JIKN

Providing information access to users is the final stage in the management of static archives. In this study, JIKN is viewed as a public access network connected to archives that have been managed through SIKN, rather than as the main focus. Therefore, JIKN is discussed as part of the access stage in the management of static archives (ANRI, 2019; Kasman et al., 2025; Wahyuningtyas et al., 2025).

Informant 1 provides a brief explanation of the functional differences between SIKN and JIKN. According to the statement, "SIKN is not for public uses. The public use is JIKN. So, SIKN is only for uploading archives. This indicates that archive managers use SIKN to upload and manage archives, while JIKN gives users the ability to search for information within the archives.

Public access to archives can be achieved through JIKN, which heavily relies on the quality of archive management in the previous stages. If the archives are not verified, properly transferred, or if the metadata is incomplete, users will have difficulty finding and using the archives, as shown in Figure 3. Therefore, public access is the outcome of the static archive management process that begins when the creator unit submits the archives. It is also a technical function of JIKN (Borlund et al., 2024; Dube, 2025; Svärd & Borglund, 2022).

Therefore, JIKN can only be discussed

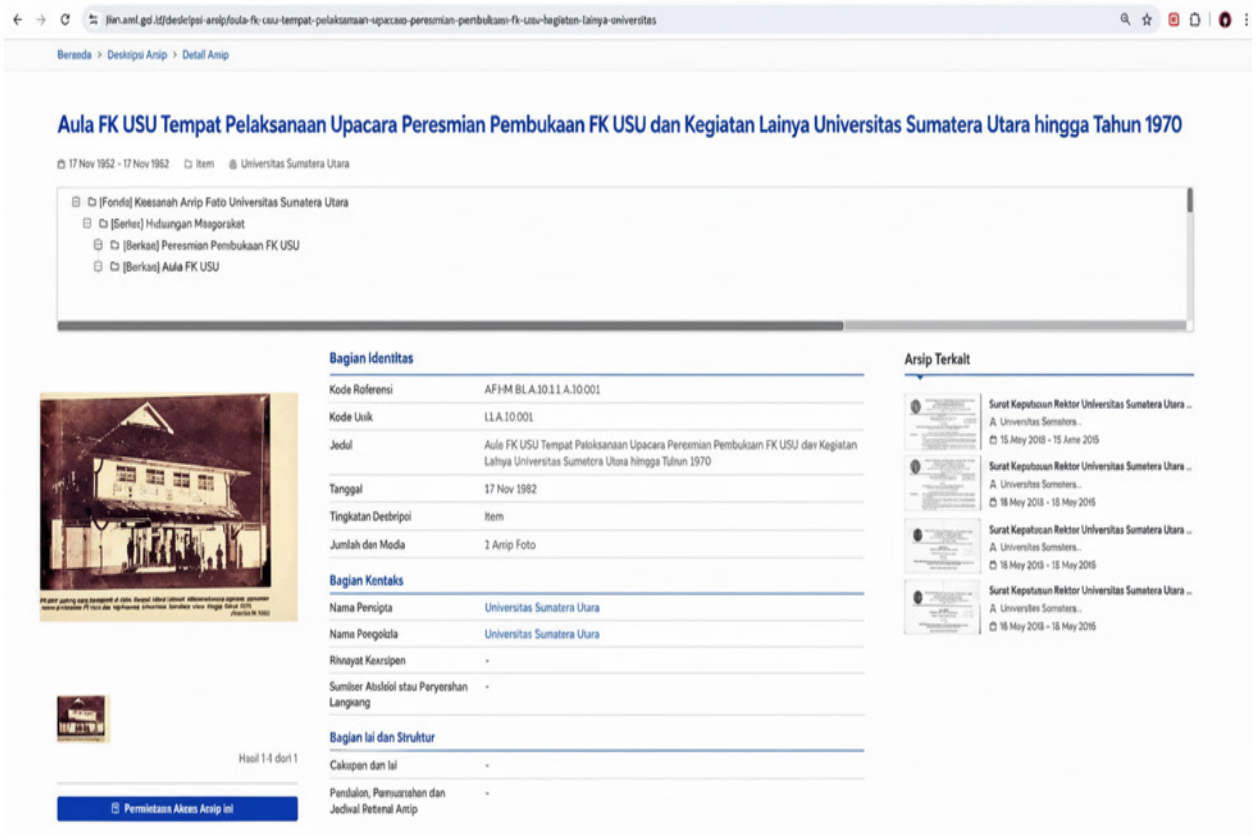

Figure 3. The interface of JIKN facilitating public access to static archives at Universitas Sumatera Utara.

Source: Documentation from research conducted in 2026.

in the context of public access. The main focus of the research remains on the management of static archives with SIKN. JIKN is an advanced stage that allows users to view and use the managed archive information. This placement makes the discussion more aligned with the research objectives, which emphasize the use of SIKN in the management of static archives.

Constraints in using SIKN in static archive management

At the Archives Office of Universitas Sumatera Utara, the use of SIKN to manage static archives still faces several challenges. The first constraint is the limitation of human resources. The interview results show that only two people are responsible for the management and uploading of archives into SIKN. Informant 1 handles text archives, while Informant 2 handles photo and video archives. This condition indicates that the management of static archives still requires more manpower.

The second constraint is the processing time, which is lengthy. Although SIKN is very beneficial as a storage system for static archives, the process cannot be done immediately, as shown by Informant 2. Before being entered into the system, the archives must be processed in stages. The number of photos that need to be processed can reach tens of files in a single activity. This condition increases the time required for uploading archives, especially those with a large number or diverse formats.

Network and system stability constitute the third constraint. According

to Informant 2, the process of archive management also depends on the network. According to Informant 1, SIKN often experiences problems because it can be accessed by many institutions from various regions of Indonesia at the same time. “It often has trouble because the whole of Indonesia accesses SIKN,” he said. This shows that the implementation of SIKN is influenced by the readiness of local managers and the stability of the national system.

The fourth constraint concerns the technical limitations of the Archive Office regarding the system. Because the SIKN application belongs to ANRI, technical issues such as errors, data loss, or system malfunctions must be reported to ANRI. The Archive Office does not have direct authority to fix the application. This condition indicates a technical dependency on the central managers. National integration helps standardise systems, but university archive managers cannot always resolve local technical issues quickly.

Overall, these constraints indicate that the utilization of SIKN in the management of static archives is not solely related to the use of the application. The success of static archive management is also influenced by the readiness of human resources, clarity of workflow, availability of infrastructure, network quality, backup strategies, and coordination with ANRI. Therefore, the optimization of SIKN should focus on strengthening the overall management of static archives, not just on the technical aspects of uploading archives (Kurniawan et al., 2024; Matlala & Ncube, 2025; Padoni et al., 2024).

CONCLUSION

The implementation of the National Archival Information System (SIKN) at the Archives Office of Universitas Sumatera Utara optimizes static archive management through a systematic workflow encompassing archive submission, verification, classification, media conversion, watermarking, metadata entry, digital object upload, backup, preservation, and public access. In this workflow, SIKN functions as the primary system for internal archival management, focusing on archival description, metadata entry, and digital object upload, whereas the National Archival Information Network (JIKN) serves as a public access network for archival information processed through SIKN. The findings reveal a clear difference between physical archive storage and system-based archive management. Physical storage is essential as the principal repository for archival materials; yet, it is restricted by limitations in capacity, retrieval efficiency, physical preservation, and access flexibility. SIKN enables the transformation of static archives into digital objects, which are thereafter described with metadata, preserved, and connected to public access via JIKN. Thus, the system does not completely replace physical archives; instead, it improves their management by increasing accessibility, preservation, and institutional supervision. The results indicate that SIKN enhances the administration of static archives by facilitating digital storage, archival description, and the preservation of particular static archives. Nonetheless,

its implementation continues to encounter several obstacles, such as insufficient human resources, prolonged processing durations, inconsistent network performance, rudimentary backup infrastructure, reliance on ANRI technology, and restricted metadata components. Consequently, further improvements should concentrate on strengthening staff expertise, optimising digital preservation systems, establishing clearer backup protocols, improving metadata quality, and sustaining collaboration with ANRI. This research theoretically enhances archival studies by framing SIKN not only as a digital storage solution, but as a vital element of the static archive management process within a higher education institution. The results demonstrate that the efficacy of an archive information system is contingent upon its integration with archival processes, such as appraisal, verification, classification, media conversion, metadata description, digital preservation, and access facilitation. This perspective enhances the comprehension that digital archive systems must be analysed from both technological and archival management perspectives. This research has several limitations. The study was conducted in a single institutional context, namely the Archives Office of Universitas Sumatera Utara, so the results cannot be generalised to other higher education archival institutions. The research included two informants directly involved in archive management, hence analysis primarily represents internal managerial and operational perspectives. Third, this research did not statistically assess user satisfaction, retrieval efficacy, or the public experience in accessing archive content via JIKN. Future studies may investigate the use of SIKN in more university archival institutions, include a wider range of informants, or evaluate user experience in accessing static archives through JIKN.

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Author Contributions

Conceptualization, P.A.W. and M.F.; methodology, P.A.W.; validation, P.A.W. and M.F.; investigation, P.A.W.; writing—original draft preparation, P.A.W.; writing—review and editing, M.F.; supervision, M.F. All authors have read and agreed to the published version of the manuscript

AI Declaration

The authors declare that artificial intelligence (AI) tools, such as ChatGPT (OpenAI) and Grammarly, were used solely to assist with language editing, grammar correction, and improving the clarity of the manuscript, and were not involved in the study design, data collection, analysis, interpretation, or generation of scientific conclusions; all AI-assisted content was carefully reviewed

and validated by the authors, who take full responsibility for the integrity and accuracy of the work. The authors confirm that all scientific content, interpretations, and conclusions are entirely their own.

Data Availability Statement

The findings of this study are substantiated by data that can be obtained upon request from the corresponding author. The data remain inaccessible to the public due to their inclusion of interview materials and institutional documentation pertinent to archival management at the Archives Office of Universitas Sumatera Utara.

Conflicts of Interest

The authors declare that there are no conflicts of interest

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