

Implementation of Archives Digitization as a Measure to Preserve and Enhance Access to Information

Nur Laili Indah Fuji Lestari, Handari Niken Anggraini, Hendro Margono*

Ilmu Informasi dan Perpustakaan, Universitas Airlangga., Surabaya, Indonesia

*hendro.margono@fisip.unair.ac.id

Article Info	Abstract
Article history: Received: December 16, 2025 Accepted: March 12, 2026 Published: March 31, 2026 Keywords: Archive Digitization Information This article is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License © 2026 Bubungan Tinggi: Jurnal Pengabdian Masyarakat	Archive digitization is a strategic step in modern information management, especially in response to the challenges of preserving physical documents and the increasing public demand for fast, efficient, and easily accessible information. Dinas Perpustakaan dan Arsip Daerah (DPAD) Daerah Istimewa Yogyakarta (DIY) is one of the institutions responsible for managing regional archives and has implemented digitization as part of the archive preservation process. This activity aims to examine the implementation of community service activities through field study practice at DPAD DIY, focusing on archiving institutional challenges and the application of digital technology in archive management. The methods used in this activity refer to the service-learning model and include observation and interviews, preparation, implementation, and evaluation. The evaluation reviews the process and results, highlighting effective aspects and identifying any obstacles or shortcomings. The instruments used in the evaluation process include observation and interview results, field notes, documentation, and literature review. The results show that the activity contributed directly to archive digitization, including 4-5 audiovisual recordings per day, more than 1,000 photo archives in 167 digital files within six working days, and one box of textual archives consisting of 37 files converted into digital format. These outputs support better archive preservation and improve access to information. However, several obstacles were also found, such as limited, outdated equipment, insufficient human resources compared to the volume of archives, and inadequate workspace conditions. Nevertheless, this activity made a real contribution to the digitization process and produced recommendations for improvements to support the sustainability of the archive media transfer program at DPAD DIY.
To cite this article: Lestari, N. L. I. F., Anggraini, H. N., & Margono, H. (2026). Implementation of archives digitization as a measure to preserve and enhance access to information. <i>Bubungan Tinggi: Jurnal Pengabdian Masyarakat</i>, 8(1), 350-365.	

INTRODUCTION

Digitization is becoming an increasingly important step in modern information management, especially amid growing public demand for fast, efficient, and easy access to data. Digitization has become one of the main strategies for various institutions in facing the challenges of document preservation and increased data accessibility ([Khamid & Oktarina, 2025](#); [Putra & Wasid, 2024](#)). This process plays an important role in maintaining the integrity and authenticity of documents and ensuring the long-term sustainability of information ([Afifah & Maulidiya, 2025](#)). Advances in information technology have

encouraged various sectors, including archival institutions, to adopt digitization as the primary approach to information management and dissemination. These developments require archival institutions to implement more adaptive preservation methods that are capable of meeting the needs of archive management in the digital age.

Digitization is an effort to overcome various problems in archive management. Archives, as records of information that have administrative, legal, and historical value, need to be preserved for sustainability and readability. However, physical archives have various limitations, ranging from the risk of damage due to age and unstable environmental conditions to the potential for loss or difficulty in retrieving information ([Afram et al., 2025](#)). Physical archives are susceptible to damage, whether biological, such as mold and insects; chemical damage due to humidity or ideal temperatures; or mechanical damage due to improper handling ([Azzahra & Putra, 2024](#)). On the other hand, public demand for archive search services continues to increase in line with the demands for transparency and openness of public information. The process of retrieving physical archives is often time-consuming, especially when the archives are not optimally organized. Therefore, digitization is seen as a solution that can overcome the limitations of physical archives while improving the efficiency and quality of archival services ([Devianto et al., 2025](#)).

Digitization refers to the process of converting physical archives, such as texts or images, into digital formats ([Arwana et al., 2024](#)). The resulting digital archives do not completely replace physical archives but serve as a secure form of duplication that can be used as a primary source of information without damaging the original documents ([Supriyanto, 2024](#)). Archive digitization is a strategic solution to minimize physical damage while providing wider access to the public ([Farrel & Utami, 2025](#)). The digitization process not only improves the protection of archives but also improves the quality of information services by providing faster and more flexible access without the need to touch the original documents. In addition, digitization enables data integration into technology-based archival information systems so that the process of searching, classifying, and disseminating information can be carried out more efficiently and accurately. Thus, digitization plays an important role in supporting long-term preservation, storage efficiency, protection of archives from the risk of physical damage, and ease of access to information.

Regional Library and Archives Office/ Dinas Perpustakaan dan Arsip Daerah (DPAD) Daerah Istimewa Yogyakarta (DIY) is one of the local government agencies responsible for managing archives and plays an important role in preserving the region's collective memory. DPAD DIY manages various types of archives, both inactive and dynamic, which reflect the history, policies, and dynamics of regional government. The number of archives continues to increase every year, requiring this institution to develop a more efficient approach to archival storage and processing ([Maryatun, 2025](#)). In addition, the public's need for fast, accurate, and easily accessible public information has encouraged the DPAD DIY to strengthen its digital-based service system. This digital transformation in archive management includes digitization as an integral part of the modern preservation process. DPAD DIY is one of the regional archival institutions that has adopted digitization in the preservation of various types of archives and provides digital archive services through archival information systems and platforms ([Kasman et al., 2025](#)).

Academically, digital archive services play an important role in supporting long-term information preservation and improving the effectiveness of archive management and utilization. Through digital services, information retrieval can be conducted more quickly, systematically, and efficiently, supporting the needs of research, education, and public information services. With the consistent implementation of digitization, DPAD DIY has become the right location for learning and observing technology-based archive

management practices. The activity applied a service learning approach, which integrates academic learning with real community needs. Through stages of observation, preparation, implementation, and reflection, students were directly involved in assisting archive digitization activities while generating practical insights and recommendations to support the improvement of archival preservation and information services at DPAD DIY.

Based on the above description, the author carried out community service activities through field lectures as a form of academic contribution in supporting the improvement of archive management quality at DPAD DIY. This activity not only aims to understand the workflow of archive digitization directly but also to identify various challenges faced by the institution. This community service also serves as a learning tool to strengthen practical competencies in the field of archiving, particularly related to the application of digital technology in modern archive management. Furthermore, this activity is expected to contribute recommendations and insights that support the development of more effective, efficient, and community-oriented digital archiving services. Thus, this field study practice not only plays a role in the educational process but also serves as a tangible form of community service that supports digital transformation efforts and improves the quality of information services at DPAD DIY.

METHODS

The implementation of the Field Study Program at the Dinas Perpustakaan dan Arsip Daerah (DPAD) Daerah Istimewa Yogyakarta (DIY) lasted for 39 days, starting from Monday, June 30, 2025, to Friday, August 22, 2025. However, this article specifically discusses the implementation of activities in the field of archive preservation, specifically the process of digitizing archives, which was carried out over a period of 13 days, from Wednesday, July 30, 2025, to Friday, August 15, 2025. This activity was carried out as a form of academic service and contribution by students in supporting archival preservation efforts at the relevant institutions. The methods used in this field practice activity consisted of several stages tailored to the needs of the activity. The method used in this activity refers to the service-learning model, which is an academic learning. The service learning model, as described by Kaye (2004), consists of four stages of service learning, namely investigation, preparation, action, and reflection. Through these stages, students are encouraged to understand the partners' problems, design relevant solutions, carry out activities, and reflect on their experiences and learning outcomes. In its implementation, the author adapted the service-learning model into four stages of activities, as follows.

1. Observations and Interviews

The initial stage of this activity was observation. Observation was carried out by directly observing various activities, work processes, and phenomena occurring at the agency. Through this stage, the author was able to record the actual conditions in the field without influencing or intervening in the course of activities ([Wani et al., 2024](#)). Observations were made by observing various activities and work procedures taking place in the DPAD DIY archive preservation unit. The author witnessed firsthand how the preservation process was carried out, from organizing archives and checking physical conditions to the preparation stage before the archives were transferred to digital form. By observing this process directly, the author gained an understanding of how physical archives are processed so that they can be converted into a digital format that is more secure and accessible.

Next, interviews were conducted to supplement the observations and explore information that could not be obtained through direct observation. Interviews were conducted through direct communication with relevant parties, such as field supervisors, employees, and other individuals with relevant information ([Romdona et al., 2025](#)).

Semi-structured interviews were conducted with archivists and archive preservation unit staff to gather information about work procedures in digitization activities, such as preparing archives before scanning, using scanning devices, digital archive quality standards, and digital data storage and security systems. The interviews were also used to identify common obstacles in archive digitization activities.

2. Preparation of Activities

After the observation and interview process is done, the next step is the preparation of the activity. This stage is an important first step before the main activity is carried out. At this stage, the author compiles various requirements based on initial findings to ensure that the activity can run optimally. Preparation activities include setting the objectives to be achieved, developing a systematic work plan, coordinating with relevant parties, and fulfilling the necessary facilities and infrastructure. By making thorough preparations, activities can be carried out in a structured, efficient manner and in accordance with the objectives that have been set.

3. Implementation of Activities

Implementation of activities is the core stage where all plans prepared in the previous stages are implemented. At this stage, the author carries out various tasks and activities according to the schedule, procedures, and instructions from the field supervisor. Activity implementation includes direct involvement in the agency's work processes, participation in daily activities, and the collection of data and experiences relevant to the activity objectives. Through this implementation, the author not only applies the work plan but also interacts with the work environment to gain a more comprehensive understanding of archival practices in the field. The implementation stage is the most important element because the overall achievement of the activity is highly dependent on the success of the implementation at this stage.

4. Evaluation of Activities

Evaluation of activities is the final stage that aims to assess the level of success of the activity implementation. The evaluation is carried out by reviewing the process and results of the implementation, identifying aspects that have been effective, and noting any obstacles or shortcomings encountered during the activity. In addition, the evaluation also includes the author's reflections on the experiences, skills gained, and practical benefits of this community service activity. The instruments used in the evaluation process include observation and interview results, field notes, documentation, and literature review. Based on these instruments, an overview of the strengths and weaknesses of the activity implementation is obtained. Through the evaluation process, recommendations are obtained that can be used to improve the implementation of similar activities in the future. This evaluation also ensures that the objectives of the activity have been optimally achieved.

To assess the success of the activity, several simple indicators were used. These indicators include (1) the number of archives successfully digitized, which included dozens of audiovisual recordings, hundreds of photo archives stored in digital files, and one box of textual archives consisting of several files converted into digital format; (2) the quality of the digitization results, which was assessed through the completeness of scanned documents, the use of appropriate digital formats (such as image and PDF formats), and systematic file naming and storage; and (3) the usefulness of the activity for the partner institution, particularly in supporting the efficiency of the archive digitization workflow. These indicators were evaluated based on observation results, documentation of digitization outputs, and field notes during the activity implementation.

RESULTS AND DISCUSSION

This section presents the results of the implementation of Field Lecture Practice and its discussion, which is analyzed based on empirical findings in the field. The description is prepared to describe the work process of the related unit, the problems identified, and the form of contribution made by the author during the activity. This discussion also aims to emphasize the relevance of the implementation of street vendors to the needs of the agency and the learning outcomes obtained through direct involvement in the professional work process.

1. Observations and Interviews

At the observation stage, activities are carried out through direct observation of the work environment of the archive preservation unit at DPAD DIY. Observations include storage layout, physical condition of archives, document handling flows, and the use of equipment that supports preservation activities. The results of the observations show that the preservation unit carries out three main functions, namely the restoration of archives that have suffered physical damage, conservation to maintain the stability of archival materials, and preservation that focuses on information protection through various techniques, including digitization. Although there are systematic efforts in the preservation of archives, observations identify that digitization activities have not been carried out comprehensively; the number of archives that have not been digitized is still quite large, especially archives that are old and vulnerable to degradation.

Meanwhile, through semi-structured interviews with archivists and related staff, several obstacles were identified that affect the effectiveness of the digitization program. This unit has six human resources, consisting of three ASN (Aparatur Sipil Negara/ Civil Servants) archivists and three non-ASN employees. Of these, two archivists are responsible for restoration and conservation activities, while only one archivist handles digitization, with the help of three non-ASN employees. The imbalance between the number of workers and the large volume of archives, including textual, photographic, and audiovisual archives, is the main factor in not maximizing digitization activities. In addition, the limitations of scanning devices and other workloads cause digitization activities to be delayed.

The findings from these observations and interviews provide an overview of the needs and challenges in the archive preservation unit. This condition has the potential to create obstacles in implementing optimal archival preservation activities and may limit the archive digitization process. As a result, the availability and accessibility of archival information for users may also be affected. Therefore, efforts are needed to ensure that archival preservation processes can be carried out more effectively, one of which is through the contribution of community service activities conducted by the authors. This information is an important foundation in determining the focus of the author's contribution during the field lecture practice, especially in assisting the digitization process of priority archives that have not been handled. Thus, this stage serves as the basis for more targeted technical planning, in accordance with the needs of the agency.

2. Preparation of Activities

Based on the results of observations and interviews, the author compiled the preparation stages as the first step before the implementation of the archive digitization process. The first stage is to identify archives that require a digitization process, including textual archives, photo archives, and audiovisual archives. This identification is carried out by considering several aspects, such as the physical condition of the archive, the level of urgency of preservation, the need for access to information, and the availability of

archives that have not been digitized. The selection of archives is carried out selectively to ensure that the digitization process provides maximum use value for the institution.

After determining the type of archive to be digitized, the author prepares the necessary tools and supporting facilities for the digitization process. The equipment includes a scanner for textual archives, a digital camera in the form of a camera stand for taking photo archive images, and a recording device in the form of a tape recorder for scanning audiovisual archives. In addition, computers are used as a medium for processing, editing, and managing digitization results. Storage devices such as external hard drives are also prepared to ensure digital files are stored securely, structured, and easily accessible when needed. The author also conducts a thorough check on the condition of the equipment to ensure that all devices are functioning optimally and ready to use. In addition, the author compiles a folder structure and file naming system that will be used in the digital storage process and as a first step to building neat digital data governance.

Thus, careful preparation not only supports the smooth running of the technical process but also ensures that the digitization results meet the set standards ([Rahmawati et al., 2025](#)). Thus, this preparation is an important foundation to ensure that the digitization process can run effectively, efficiently, and in accordance with applicable archival standards.

3. Implementation of Activities

At this stage, the digitization process is carried out through a series of steps, starting from scanning documents to producing digital files that are ready to be stored and accessed. The digitization activities carried out by the author include three types of collections, namely audiovisual archives, photo archives, and textual archives. Each type of archive has different characteristics and handling procedures, so the stages of digitization are adjusted to each need.

a. Audiovisual Archive

Audiovisual archives are archives that are stored in sound and/or moving image formats, such as video recordings, sound cassettes, documentaries, or similar digital materials that record certain events, activities, or information ([Maryatun, 2025](#)). This type of archive has different characteristics from textual and photographic archives because it contains dynamic elements that require special technical handling, both in terms of preservation and digitization ([Candraningtyas et al., 2025](#)). The audiovisual archive scanning process is shown in Figure 1.



Figure 1 Audiovisual archive scanning process

In the process of digitizing audiovisual archives, archive duplication is carried out by transferring content from the original media to a digital format without

changing the authenticity or quality of the information. The initial stage begins with checking the physical condition of the media, which is the analog tape that is the place where the recording is stored, to ensure that the contents of the recording can still be played safely. In this activity, there are two types of tapes, namely VHS, which contains audio recordings, and Hi8, which contains audio recordings as well as videos. After the media condition is confirmed to be suitable, the tape is put into a tape recorder for an initial playback test. If the tape can be played without any problems, the digital recording process can continue. The tape recorder is connected to the monitor to ensure that the scanning process (Figure 1) is going well and that the entire recording activity can be visually monitored. The duration of the digitization process is relatively long because it has to adjust to the duration of the original recording. An audiovisual file generally takes 45-60 minutes, depending on the length and complexity of the content it contains. After the scanning process, the author also checks and collects data on the results of digitizing audiovisual archives. The archive is double-checked by matching the digital files stored on the computer with the data on the analog cassettes to ensure the suitability of the content. Next, the digital files are sorted based on their respective identification numbers. The digital file is then duplicated and stored on an external hard drive as a security copy to ensure the sustainability of the preservation. Meanwhile, analog tapes that have been digitized are given special markings as information that the digitization process has been carried out and then arranged in a box and stored in a cabinet.

The results of the activity showed that in one working day, about four to five recordings can be successfully scanned. This amount is obtained by taking into account that the digitization process is not carried out in full throughout the day because the author also carries out various other tasks that are part of daily activities. Thus, this achievement reflects the efficiency of the digitization process that is maintained even though it is carried out at the same time as other operational work.

Digital archiving differs from manual archiving, particularly in terms of storage media and access to archival information. In manual archiving, records are stored in physical form, which requires relatively large storage space and often results in a time-consuming information retrieval process because it is carried out conventionally. In contrast, digital archiving allows records to be stored in electronic form, making their management more practical and enabling information retrieval to be conducted more quickly and systematically. [Husnita & Kesuma \(2020\)](#) state that archival management as a source of organizational information can be carried out through either manual or digital systems; however, the use of digital technology is considered to improve the effectiveness of archival management.

Furthermore, the implementation of digital archives provides various benefits in improving the efficiency of archive management and storage within an institution. The digitization process enables physical archives to be converted into digital formats, making them easier to store, manage, and reuse when needed. [Azzahra & Putra \(2024\)](#) explain that the implementation of digital archives can enhance storage efficiency because documents can be stored in electronic media that are more practical and do not require large physical space. In addition, electronic archival systems allow archival management processes to be conducted in a more structured and systematic manner, thereby supporting the long-term effectiveness of the archival management ([Salmin, 2018](#)). Thus, archive digitization not only functions as an effort to preserve information but also provides positive impacts in improving the effectiveness and efficiency of archival management within an institution.

b. Photo Archive

A photo archive is an archive that contains visual recordings in the form of still images that represent an event, condition, or activity at a certain time ([Saputro & Fitri, 2021](#)). As a permanent archive that has informational and historical value, photo archives require special handling, especially when digitized into digital format, so that visual quality is maintained. The process of shooting archive photos is shown in Figure 2.



Figure 2 Photo archive shooting process

In the process of digitizing photo archives, it takes a relatively long time because each photo must be scanned and examined carefully (Figure 2). The photo archive is scanned using a digital camera, and the image capture is automatically connected to the monitor via the EOS app or the app according to the camera type. The author digitized 24 photo archive files, all of which were stored in negative format. After the scanning process, the author continues the editing stage to convert the negative format to a positive format through the ACDSee application. This stage requires a high degree of precision, as errors in contrast, lighting, and color balance settings have the potential to reduce the clarity and visual accuracy of the photo archive. Each photo sheet must therefore go through a manual inspection process before it is declared suitable for use. This effort is made to ensure that the information contained in the photo is digitized properly so that it still has a use value and historical value for future needs. In total, within six working days, the number of photo archives that were successfully digitized and went through the editing stage reached more than 1,000 photos, which were stored in 167 files. This number shows that the process of digitizing photos requires time, precision, and high consistency to ensure that the final result still represents the original visual condition of the archive.

c. Textual Archive

Textual archives are archives that are arranged in the form of written documents, either in the form of manuscripts, reports, letters, notes, or other administrative documents. These archives store information that is factual, administrative, or historical, so they require special handling to keep the content intact and accessible effectively. The process of scanning textual archives is shown in Figure 3.



Figure 3 Textual archive scanning process

In the process of digitizing textual archives, documents are scanned using a Plustek brand scanner with the largest scanner bearing screen for scanning A3-sized documents as seen in Figure 3. The initial stage involved preparing the archives to be scanned. The selected archives had undergone a selection process and were considered to have a certain level of urgency for digitization, based on their physical condition, informational value, and the need for access. Paper-based archives were then placed on the scanning surface of a scanner to proceed with the digitization process. The results of the scan are displayed in real-time on the monitor through the Plustek application, or, according to the scanner brand used, so that the author can observe the quality and completeness of each scanned document. In this activity, the author managed to scan the archives of the General Bureau—as many as 1 box, consisting of 37 files, with the number of documents in each file reaching tens to hundreds of sheets—within two working days. The scanning process is carried out carefully and systematically, because all documents must be scanned without missing a beat to ensure the completeness and accuracy of the information.

After the archives are scanned, checks are carried out to ensure that no documents are missed. Then, layout editing is carried out so that the position of the document is in accordance with the standard, followed by a batch rename process to adjust the file name based on the archive number. Next, the file that is still in Notepad format is converted to Excel (xlsx). The scanned archive is also converted from TIFF to JPG and then re-merged into a PDF file. The final stage is the addition of a watermark to each PDF file as a sign of ownership and security of the document. This lengthy process taught the author that digitization is not just about scanning documents but also involves a series of technical stages that ensure digital documents have standards of feasibility, security, and authenticity. The scanned archives were initially produced in TIFF format to maintain high image quality. However, due to storage limitations and system compatibility considerations, the files were converted into JPG format before being compiled into PDF documents. This step was also aligned with the operational workflow used by the partner institution to facilitate easier storage and access.

The difference that the author understands regarding the digitization of textual archives lies in the purpose of its use. For service or access to media needs, digitization is usually only done on the front of the archive or cover to ensure the availability of archives at DPAD DIY. Meanwhile, for long-term storage purposes, the entire file must be digitized to a higher quality standard, in contrast to the needs of the service. That way, archives can be stored in a more secure digital format and

can be accessed again in the future without the risk of physical damage. The digitization of archives at DPAD DIY is guided by the National Archives Regulation of the Republic of Indonesia Number 02 of 2021 concerning the Transfer of Static Archive Media with Conversion Methods.

After going through the archive digitization stage, the next step is to compile an archive list. The archive list is an important instrument that serves as a reference and guideline in archive utilization activities (DPKY, 2022). The presence of the list allows archive users to obtain information quickly, precisely, and systematically about the location of archive storage, the content of information contained in it, and the characteristics of archives both in physical and digital form. The list of archives here is divided into two types, namely the list of archives of processed results and the list of digitized archives. The list of processed archives is used for physical archives that have gone through a manual arrangement process. The format of this list typically includes the archive number as a unique identity, the name of the archive indicating the title or main contents of the archive, and a description of the archive that contains a brief explanation of the context and content of the archive. Meanwhile, the list of digital output archives is used for archives that have been digitized. Because digital archives have certain technical characteristics, the format of this list consists of more detailed information, including archive numbers, content descriptions, number of related files, digital file names, file sizes, and time descriptions in the form of dates, hours, minutes, and seconds. In addition, this list also includes pixel information that indicates the resolution of the digital file.

Overall, the implementation of archive digitization activities during street vendor visits shows that the work procedures in the archive preservation unit, precisely the field of archive digitization work at DPAD DIY, have been running in accordance with operational standards and basic principles of archive preservation set by the national archives institution. Each stage, from checking the physical condition of the media, the scanning process, and the processing of digital results, to storing final files, is carried out based on a conversion method that emphasizes accuracy, traceability, and protection of archival information. This is in line with the provisions of ANRI Regulation Number 02 of 2021 concerning Static Archive Media Transfer, which emphasizes that the digitization process must be carried out through systematic stages that include media preparation, scanning with certain resolution standards, quality control, and tiered storage to ensure its security.

In addition to ensuring that the media transfer process runs in accordance with technical standards and national archive provisions, the digitization activities carried out by DPAD DIY also show the implementation of the strategic function of preserving archive content. One of the added values of digitalization is the opportunity to carry out digital restoration, namely efforts to improve the quality of archive content through visual improvement, strengthening the readability of text, or adjusting colors for archives that have experienced a decline in quality due to age or physical damage. This practice is relevant to the findings of [Lolytasari & Dirsanala \(2023\)](#) who affirm that digital restoration is able to help improve readability and extend the life of the information contained in archives, especially when the physical condition of documents no longer allows manual recovery. At DPAD DIY, processes such as polishing selection on photos, adjusting contrast, and removing noise in scanned documents show that digitization not only aims to convert media but also improves the quality of information so that it remains accessible to the public.

Digitization activities are also not carried out carelessly but through an archive selection process that considers the use value, physical condition, and urgency of public access. This principle is in line with the opinion of [Zakaria & Sagita \(2025\)](#), who emphasized that the selection of archives for digitization must consider informational and historical aspects while also considering the risk of damage if the archive continues to be used physically. At DPAD DIY, priority is given to archives that have high cultural value, high levels of use, or show symptoms of damage. This shows that digitization is not only a technical activity but also a managerial process that involves consideration of policies, conservation, and the needs of archive users.

The implementation of digitization in DPAD DIY also has a significant impact on the dimension of public services. This transformation makes institutions more adaptive and responsive to technological developments and the needs of modern society. As emphasized by [Andhika & Irawati \(2023\)](#), archival digitization opens up wider access opportunities for the public and allows the use of archives in various contexts such as academic research, education, policy advocacy, and historical reconstruction. This is evident from the increasing efficiency of access provided by digital archives, where users no longer depend on the limitations of physical reading spaces or the risk of damage to the original archive.

Thus, the activities that have been carried out reflect the conformity between field practice and applicable technical standards and archiving policies. The implementation of digitalization not only meets the needs of agencies but also provides an empirical understanding of the challenges and dynamics of archive preservation within government institutions. This experience reinforces the finding that the quality of digitization is greatly influenced by three main aspects, namely the availability of adequate devices, human resource competence, and structured work standards, as emphasized by [Husna & Suhendi \(2025\)](#), that the success of archive digitization is determined by the synergy between technology and the capacity of implementing personnel. With this foundation, the next evaluation process can be carried out more directly, both in terms of improving facilities, structuring work, and developing human resources to support the sustainability of the archive digitization program.

4. Evaluation of Activities

The next stage is an evaluation of activities to identify advantages and disadvantages during the work process. The implementation of archive digitization activities at DPAD DIY has generally been carried out in accordance with the applicable standard procedures. The advantage of this work unit is that it has relatively adequate facilities and infrastructure to support digitization activities, ranging from scanners for textual and cartography archives and special devices for photo archives to tape recorders for audiovisual archives. The availability of this diverse equipment shows that there are systematic efforts in adapting the digitization method to the characteristics of archival media so that the results obtained are in accordance with technical needs and archival standards. [Farrel & Utami \(2025\)](#) revealed that the digitization of archives, especially historical photo archives, is an important strategy to prevent physical damage and expand the accessibility of information, provided that adequate equipment and technical support are available.

In addition, another advantage can be seen in the division of labor in the unit, which has been running quite well. This is shown by the person in charge of each archival material that is processed so that the digitization process can be more controlled and directed. This clear division of work serves to minimize errors, increase efficiency, and ensure that each stage of work can be properly accounted for. [Zuhruf \(2024\)](#) revealed

that the management of digital archives in government agencies requires a clear work hierarchy so that coordination between employees can take place effectively.

However, the problem faced is that some of the equipment is quite old or obsolete, and some is even obtained independently from flea markets, such as tape recorders for audiovisual digitization. This condition shows that there are budget limitations that hinder the renewal of facilities. Obsolete equipment risks reducing the quality of digitization results and slowing down the work process. According to [Bawono \(2022\)](#) the use of digital devices that do not meet standards or have passed their useful life can have an impact on the degradation of the quality of digitized results, including the appearance of sound distortion, a decrease in visual resolution, and damage to digital archives in the long term. Thus, sustainable budget support is essential to ensure the sustainability of the archive digitization program, given the ever-evolving need for modern equipment.

In addition, another obstacle is the limitation of human resources. Although the division of labor has been done well in practice in the field, the archivists responsible for digitizing audiovisual and photo archives are only one person, while textual and cartographic archives are handled by three non-ASN personnel. The limitation of human resources in the process of digitizing photo and audiovisual archives has an impact on the relatively long duration because it demands the fulfillment of digitization quality standards. The process of digitizing photo archives takes longer because it includes the scanning stage as well as conversion from negative to positive format, while audiovisual archives take an average of 45-60 minutes per unit, depending on the duration and complexity of the content. This condition creates an imbalance between the workload and the available manpower capacity and has the potential to affect the quality and timeliness of work completion. The results of a study conducted by [Putri & Helmi \(2025\)](#), show that the limitation of human resources, both in terms of number and technical competence, is the most dominant inhibiting factor in the implementation of archive digitization. This confirms that the success of digitalization is not only determined by the completeness of the device but also by the availability and capacity of the experts who handle the process. Also, some workers who have responsibilities in certain fields also only understand the field, so of course actions or efforts are needed to equalize the competencies between workers and each other.

Another shortcoming faced by the archival media transfer unit at DPAD DIY is the inadequate working space conditions, which seem narrow and cause overlap between fields of work. This situation not only affects the comfort and ergonomics of workers but also has an impact on the efficiency and quality of the digitization results of the limited movement arena, as tools are difficult to place appropriately, and the risk of damage to archives and equipment increases. In practice in the field, archives in boxes or cassette boxes are often not specifically placed but are mixed with other work areas, causing potential irregularities and damage. [Putri & Arfa \(2019\)](#) revealed that the layout and capacity of storage space are often obstacles in archive management because they are not in accordance with ANRI standards, such as the distance between shelves and the separation of workspace functions from storage space.

Based on problems or shortcomings in the digitalization work unit, the solutions that can be offered include, first, increasing budget support for the update of digitization devices. The availability of modern equipment, in accordance with international standards, is an urgent need so that the quality of digitization results is optimal. According to [Adeline et al., \(2025\)](#) investment in new devices, such as high-resolution scanners and special digital recorders, can minimize the risk of quality degradation and

accelerate the duration of the digitization process. Sustainable budgeting can also reduce reliance on old equipment that is prone to damage and is difficult to repair.

Second, there is a need to strengthen human resources both in terms of number and competence. The people in charge of archival materials must also be able to understand each other's techniques, not only mastering their fields. The addition of archivists or non-ASN operators who have digital technical skills will help balance the workload between fields. In addition, improving competencies through technical training, workshops, and digital preservation certification is needed to equalize abilities between workers. [Putri & Helmi \(2025\)](#) revealed that the success of archive digitization is significantly influenced by the adequacy and expertise of human resources, so investment in professional development is a priority.

Third, improving the spatial planning and arrangement of work facilities. A representative workspace needs to be separated between the archive storage area, the digitization area, specifically differentiated for each archival material, and the administration area. This is important to maintain the physical security of archives and minimize the potential for damage due to overlapping activities, as [Putri & Arfa \(2019\)](#) showed that workspaces that comply with archival standards, such as air circulation, lighting, and separation of space functions, have a direct effect on the quality of digital archive management. Thus, ergonomic space planning is a long-term solution in supporting work effectiveness.

CONCLUSION

The implementation of archive digitization activities at Dinas Perpustakaan dan Arsip Daerah (DPAD) Daerah Istimewa Yogyakarta (DIY) shows that digitization is an effective effort in supporting the preservation of long-term archives while increasing the accessibility of public information. Digitization not only functions as a process of transferring media from physical to digital form but also as a solution to various modern archival problems, such as the risk of archive damage, limited storage space, and increasing public demands for fast, accurate, and accessible information services. The implementation of digitalization at DPAD DIY has referred to the applicable archival preservation principles, especially as stipulated in ANRI Regulation Number 2 of 2021 concerning Static Archive Media Transfer, with systematic technical stages on textual, photographic, and audiovisual archives. However, the results of the service through Field Lecture Practice show that the implementation of archive digitization still faces several challenges, including the limitations of more modern and adequate digitization tools, the number of human resources that are not proportional to the volume of archives that must be processed, and the condition of the workspace that has not fully supported the digitization process optimally. These challenges have implications for the speed and efficiency of the implementation of archive digitization. Seeing these findings, street vendor activities make several important contributions to agencies, both in the form of workforce support in the process of digitizing priority archives and through problem identification and preparation of improvement recommendations. Thus, community service activities through the practice of field lectures not only support the educational process but also contribute directly to digital transformation efforts and improve the quality of information services at DPAD DIY.

Nevertheless, this activity has several limitations that should be considered. The implementation was conducted within a relatively limited time frame and focused on assisting the archive digitization process in the archival preservation unit. Therefore, the results obtained do not fully represent the overall archival management practices within DPAD DIY. In addition, the activity was limited to the technical aspects of archive

digitization and did not yet include the development of a digital archive management system or a comprehensive digital preservation strategy. Therefore, to support the sustainability of archive digitization services, stronger institutional support is needed, including the provision of more adequate digitization equipment and workspace, the strengthening of human resource capacity in the field of digital archiving, and the development of a more integrated digital archive management system in order to improve the effectiveness of archival preservation and public access to information.

CONFLICTS OF INTEREST

The authors declare that there is no conflict of interest in the implementation of field lectures as part of community service or in the preparation of this article.

AUTHOR CONTRIBUTIONS STATEMENT

This statement emphasizes that each author has made a significant contribution. Author 1 and Author 2 were actively involved in the implementation of the field study activities, while Author 3 acted as a supervisor during the activities. All authors also contributed actively to the process of drafting and revising this article.

AI DISCLOSURE STATEMENT

The author used ChatGPT (OpenAI) during the preparation of this manuscript for language refinement, minor editing, and initial inspiration in developing the title, structure, and identification of relevant references. After using the tool/service, the author thoroughly reviewed and edited the content as needed and takes full responsibility for the content of the publication. The authors declare that this research was prepared, researched, written, and edited without the aid of artificial intelligence (AI) techniques.

ACKNOWLEDGMENTS

The authors would like to thank Dinas Perpustakaan dan Arsip Daerah (DPAD) Daerah Istimewa Yogyakarta (DIY) for providing the opportunity for the authors to learn and gain experience during the implementation of activities at the institution. Gratitude was also conveyed to the internship supervisor for the guidance, direction, and support provided during the implementation of the activity. In addition, the authors expressed their appreciation to all parties who have contributed to this activity, which cannot be mentioned individually.

REFERENCES

- Adeline, I. M., Agustini, N., & Silvana, T. (2025). From analog to digital: Digitization and digital preservation of microfilm collections. *Journal of Library and Information Science*, 5(2), 209–222. <https://doi.org/10.24198/inf.v5i2.46862>
- Afifah, A., & Maulidiya, A. (2025). *Digitalisasi arsip dan administrasi pendidikan (Sistem digital, aplikasi dan manajemen data)*. 1–9.
- Afram, L. Y., Rosmaya, M., & Nursanto, G. A. (2025). Pentingnya digitalisasi arsip untuk preservasi: Systematic literature review. *JATI: Jurnal Mahasiswa Teknik Informatika*, 9(4), 5608–5614. <https://doi.org/doi.org/10.36040/jati.v9i4.13821>
- Andhika, D. B., & Irawati, Y. E. (2023). Strategi pemeliharaan arsip dinamis inaktif melalui alih media. *Information Science and Library*, 4(1), 1–9. <https://doi.org/dx.doi.org/10.26623/jisl>
- Arwana, N. Y., Batubara, A. K., & Fathurrahman, M. (2024). Alih media arsip sebagai upaya preservasi di dinas perpustakaan dan kearsipan labuhanbatu utara. *JPBB : Jurnal Pendidikan, Bahasa Dan Budaya*, 3(2).

- <https://doi.org/doi.org/10.55606/jpbb.v3i2.3025>
- Azzahra, M. F., & Putra, P. (2024). Implementasi arsip digital dalam efisiensi penyimpanan. *Jurnal Terekam Jejak*, 1(1), 1–13.
- Bawono, H. (2022). Digital Preservation and digital records and archives management in indonesia: contextualization-synthesis of two models digital preservation. *Jurnal Kearsipan*, 17(2). <https://doi.org/doi.org/10.46836/jk.v17i2.257>
- Candraningtyas, Z. Z. A., Ansor, S., & Safii, M. (2025). Praktik klasifikasi arsip audio pada stasiun radio lpp rri malang, kalimaya bhaskara fm dan city guide fm. *TIK Ilmeu: Jurnal Ilmu Perpustakaan Dan Informasi*, 9(1), 13–32. <https://doi.org/10.29240/tik.v9i1.12666>
- Devianto, Y., Sukowo, B., & Jatikusumo, D. (2025). Transformasi digital umkm melalui pelatihan data science: studi kasus di kelurahan kembangan utara. *Abdimasku: Jurnal Pengabdian Masyarakat*, 8(3), 1019–1032. <https://doi.org/doi.org/10.62411/ja.v8i3.3075>
- Farrel, M. J., & Utami, R. B. (2025). Alih media arsip foto sejarah sebagai upaya pengamanan dan pemeliharaan arsip di museum brawijaya. *Jurnal Ilmiah Multidisiplin*, 1(5), 2991–3000. <https://doi.org/10.63822/y5v6dk48>
- Husna, D. B., & Suhendi. (2025). Digitalisasi administrasi di era smart government. *JISMA: Jurnal Ilmu Sosial, Manajemen, Dan Akuntansi*, 3(5), 1521–1536.
- Husnita, T. J., & Kesuma, M. el-K. (2020). Pengelolaan arsip sebagai sumber informasi bagi suatu organisasi melalui arsip manual dan arsip digital. *Jurnal Ilmu Perpustakaan Dan Informasi Islam*, 1(2), 27–41. <https://doi.org/doi.org/10.24042/el%20pustaka.v1i2.8503>
- Kasman, A., Qorih, Destrian, O., Zainuddin, Z. I., & Adnans, A. A. (2025). Implementasi jaringan informasi kearsipan nasional upaya peningkatan akses informasi arsip negara yang autentik dan berkelanjutan. *Jurnal Pemikiran Dan Penelitian Administrasi, Sosial, Humaniora Dan Kebijakan Publik*, 8(1), 144–158. <https://doi.org/10.24198/responsive.v8i1.62330>
- Kaye, C. B. (2004). *The complete guide to service learning: proven, practical ways to engage students in civic responsibility, academic curriculum, & social action*. Free Spirit Pub.
- Khamid, C. A., & Oktarina, N. (2025). Strategi konservasi dan pelestarian arsip untuk jangka panjang. In *Administrasi Perkantoran* (pp. 357–372).
- Lolytasari, & Dirsanala, A. (2023). Digitalisasi arsip dalam mendukung pelaksanaan e-government. *Shaut Al-Maktabah: Jurnal Perpustakaan, Arsip Dan Dokumentasi*, 15(1), 18–30. <https://doi.org/10.37108/shaut.v15i1.963>
- Maryatun, I. (2025). Menyelami ingatan kolektif: Peran dan tantangan arsip audiovisual di era digital. *Majalah Forum Kearsipan Universitas Gadjah Mada*, 8(2).
- Putra, R. M. R. W., & Wasid. (2024). Implementasi digitalisasi dalam pelestarian sumber-sumber sejarah islam di kota surabaya. *Prosiding Konferensi Nasional Mahasiswa Sejarah Peradaban Islam (KONMASPI)*, 1.
- Putri, A. P., & Arfa, M. (2019). Analisis desain tata ruang depot arsip di dinas kearsipan dan perpustakaan kabupaten semarang. *Jurnal Ilmu Perpustakaan*, 7(3), 1–10.
- Putri, Z. A., & Helmi, R. F. (2025). Alih media arsip: Implementasi dan hambatan dalam meningkatkan manajemen kearsipan di dinas kearsipan dan perpustakaan provinsi sumatera barat. *Jurnal Administrasi Pemerintahan Desa*, 6(2). <https://doi.org/10.47134/villages.v6i2.301>
- Rahmawati, I., Lestari, H., & S, S. N. (2025). Optimalisasi pengelolaan arsip fisik dan digital di sekolah dalam era transformasi digital. *Jurnal Pengabdian Masyarakat Institut Agama Islam Sahid Bogor*, 4(1), 19–26.

- Romdona, S., Junista, S. S., & Gunawan Ahmad. (2025). Teknik pengumpulan data: observasi, wawancara, dan kuesioner. *JISOSEPOL: Jurnal Ilmu Sosial Ekonomi Dan Politik*, 3(1), 39–47.
- Salmin, T. (2018). Sistem pengarsipan arsip elektronik. *Jurnal Pustaka Ilmiah*, 4(2).
- Saputro, R. A., & Fitri, M. (2021). Jurnal sejarah dan pembelajaran sejarah. *Jurnal Sejarah Dan Pembelajaran Sejarah*, 7(2), 126–134.
- Supriyanto, I. (2024). Alih media arsip konvensional pada arsip vital ban-pt. *INNOVATIVE: Journal Of Social Science Research*, 4(4). <https://doi.org/doi.org/10.31004/innovative.v4i4.13841>
- Wani, A. S., Yasmin, F. A., Rizky, S., Syafira, & Siregar, D. Y. (2024). Penggunaan teknik observasi fisik dan observasi intelektual untuk memahami karakteristik siswa di sekolah menengah pertama. *Jurnal Pendidikan Tambusai*, 8(1), 3737–3743.
- Zakaria, M. A., & Sagita, N. I. (2025). Alih media arsip sebagai pemeliharaan nilai evidence: Studi kasus arsip pengadaan barang dan jasa di puslatbang pkasn lan tahun 2024. *Jurnal Indonesia: Manajemen Informatika Dan Komunikasi*, 6(2), 894–913. <https://doi.org/doi.org/10.63447/jimik.v6i2.1316>
- Zuhurf, A. (2024). Transformational leadership: Peran pimpinan dalam transformasi tata kelola kearsipan di lingkungan lembaga administrasi negara. *Jurnal Good Governance*, 20(1). <https://doi.org/doi.org/10.32834/gg.v20i1.748>

AUTHOR PROFILES



Nur Laili Indah Fuji Lestari
nur.laili.indah-2022@fisip.unair.ac.id
Ilmu Informasi dan Perpustakaan, Universitas Airlangga
Google Scholar ID : aLYVEeMAAAAJ



Handari Niken Anggraini
handari.niken.anggraini-2022@fisip.unair.ac.id
Ilmu Informasi dan Perpustakaan, Universitas Airlangga
Google Scholar ID : kd5UE8T9erTGSbB86



Hendro Margono
hendro.margono@fisip.unair.ac.id
Ilmu Informasi dan Perpustakaan, Universitas Airlangga
Google Scholar ID : vIX5R5AAAAAJ
Sinta ID : 6729444
Orcid ID : 0003-2747-8285
Scopus ID : 57192269385