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Strategy for Preserving Rare Collections Using the Preservation Pyramid Theory at the UPT Bung Hatta Proclamator Library

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Abstract

This study is motivated by the high vulnerability of rare collections to physical, chemical, and biological deterioration, particularly in tropical environments with limited environmental control. Despite their substantial historical and cultural value, preservation strategies in specialized libraries remain insufficiently integrated and optimized. This study aims to analyze rare collection preservation strategies at the UPT Bung Hatta Proclamator Library based on the Preservation Pyramid Theory and to identify the supporting and inhibiting factors affecting their implementation. A qualitative approach with a case study design was employed. Six informants were purposively selected, comprising the head of preservation, preservation team members, a conservator, librarians, and a user. Data were collected through observation, in-depth interviews, and documentation, and analyzed using the interactive model of Miles, Huberman, and Saldaña. The findings reveal that preservation strategies have been implemented across four levels: preventive conservation, passive conservation, active conservation, and restoration, with preventive conservation as the dominant strategy. These efforts include environmental control using dehumidifiers, silica gel, and thermohygrometers, as well as

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restricted access policies. However, several limitations remain, including budget constraints, suboptimal storage facilities, and inconsistent documentation practices. Active conservation and restoration have been relatively well implemented with support from trained conservators, although technical constraints persist. The study concludes that rare collection preservation at the UPT Bung Hatta Proclamator Library has been implemented but is not yet fully integrated across strategic and operational levels. Its contribution lies in demonstrating the relevance of the Preservation Pyramid Theory for evaluating rare collection management in specialized libraries and emphasizing the need for stronger institutional policies, preservation-standard facilities, and enhanced human resource capacity to ensure sustainable rare collection preservation.

Keywords: Rare Collection Preservation; Preservation Strategies; Specialized Library; Preservation Pyramid Theory; Library Conservation.

INTRODUCTION

Libraries play a fundamental role in preserving knowledge and cultural heritage, particularly through the management of rare collections that embody historical, intellectual, and cultural significance (Aulia & Rachman, 2023). Rare collections function as primary sources that provide authentic and irreplaceable evidence for academic inquiry (Putri Abduh et al., 2023). These collections also serve as instruments for transmitting knowledge across generations, ensuring the continuity of intellectual traditions (Barman & Singh, 2024). In this sense, the preservation of rare collections is closely linked to the sustainability of cultural memory and national identity (Makmur et al., 2021). The UPT Bung Hatta Proclamator Library represents a specialized institutional setting dedicated to preserving collections related to one of Indonesia's founding figures (Perpustakaan Nasional RI, 2020). This institution is responsible for managing a wide range of materials, including rare books, manuscripts, and archival documents associated with Mohammad Hatta (Perpustakaan Nasional RI, 2020). The uniqueness of this library lies in its role as a custodian of documentary heritage that cannot be replicated elsewhere (Putri Abduh et al., 2023). Consequently, the preservation of its collections becomes a critical institutional responsibility (Aulia & Rachman, 2023).

Despite their importance, rare collections are inherently vulnerable to various forms of deterioration that threaten their long-term preservation (Hapsari et al., 2025). Physical damage, such as torn pages and detached bindings, is commonly found in aging

materials (Nisa et al., 2025). Chemical deterioration, particularly acidification, leads to paper discoloration and structural fragility (Nisa et al., 2025). Biological factors, including mold and insect activity, further accelerate the degradation process (Hapsari et al., 2025). These forms of deterioration often occur simultaneously and reinforce each other, resulting in progressive damage over time (Makmur et al., 2021). Environmental conditions constitute a major determinant of the rate and severity of material deterioration (Teygeler et al., 2001). In tropical climates, high humidity levels create favorable conditions for biological growth and chemical reactions that damage paper-based materials (Wickens, 2024). Temperature fluctuations also contribute to the instability of materials and accelerate deterioration processes (Teygeler et al., 2001). These environmental challenges necessitate systematic and continuous control measures to maintain collection stability (Putri Abduh et al., 2023).

At the regional level, preservation challenges are reflected in the increasing vulnerability of manuscripts in Southeast Asia. A significant proportion of these materials are at risk of permanent loss due to inadequate preservation infrastructure (Hapsari et al., 2025). This situation underscores the urgency of developing effective preservation strategies tailored to regional conditions (Makmur et al., 2021). In Indonesia, preservation challenges are further intensified by the country's high exposure to natural disasters (Badan Nasional Penanggulangan Bencana (BNPB), 2023). Disaster events such as floods, earthquakes, and fires pose direct threats to the physical integrity of library collections (Badan Nasional Penanggulangan Bencana (BNPB), 2023). These risks also disrupt storage conditions and infrastructure, indirectly accelerating material deterioration (Makmur et al., 2021). Therefore, preservation strategies must account for both environmental and disaster-related risks (Hapsari et al., 2025).

Empirical findings from the UPT Bung Hatta Proclamator Library confirm the presence of these preservation challenges (Nisa et al., 2025). Previous studies have identified multiple forms of deterioration affecting the library's rare collections (Nisa et al., 2025). These findings indicate that preservation practices are not yet fully optimized (Hapsari et al., 2025). Consequently, there is a need for systematic and comprehensive preservation strategies (Makmur et al., 2021). From a theoretical perspective, preservation is conceptualized as a systematic effort to extend the lifespan of library materials (Rifauddin & Pratama, 2020). Preservation also involves maintaining both the physical and informational integrity of collections (Elnadi, 2021). Furthermore, preservation is closely linked to institutional policies and strategic management practices (Sasmitasari &

Handayani, 2022). This perspective highlights the need for an integrated approach that combines technical, managerial, and environmental considerations (Hotimah et al., 2023).

Preservation activities encompass multiple functions that operate simultaneously within library systems (Hotimah et al., 2023). These functions include protection against potential damage and maintenance of collection usability (Putri Abduh et al., 2023). Preventive actions are particularly important in minimizing risks before damage occurs (Harefa et al., 2024). In addition, corrective measures are required to address existing damage and restore functionality (Aulia & Rachman, 2023). Previous studies have identified several limitations in the implementation of preservation strategies in Indonesia (Rifauddin & Pratama, 2020). Financial constraints remain a major obstacle in maintaining preservation programs (Rifauddin & Pratama, 2020). The lack of trained personnel also limits the effectiveness of technical interventions (Aulia & Rachman, 2023). Institutional support is another critical factor influencing preservation outcomes (Hapsari et al., 2025).

The application of preservation theories in Indonesian libraries is still fragmented and incomplete (Sharlino & Nurizzati, 2024). Many institutions have not fully implemented all levels of preservation strategies (Aulia & Rachman, 2023). This partial implementation reduces the overall effectiveness of preservation efforts (Hapsari et al., 2025). Most previous research has focused on public or general libraries rather than specialized institutions (Rifauddin & Pratama, 2020). Studies on libraries managing personal collections of national figures remain limited (Aulia & Rachman, 2023). This limitation creates a gap in understanding preservation practices in unique institutional contexts (Sharlino & Nurizzati, 2024). The research gap of this study lies in the lack of comprehensive investigations that analyze preservation strategies in specialized libraries managing national figure collections through a fully integrated application of the Preservation Pyramid Theory.

The Preservation Pyramid Theory provides a structured framework for understanding preservation practices (Teygeler et al., 2001). This theory organizes preservation strategies into hierarchical levels based on their function and intensity (Teygeler et al., 2001). Preventive conservation is positioned as the foundational level of preservation (Wickens, 2024). Passive conservation emphasizes appropriate storage and handling practices (Aulia & Rachman, 2023). Active conservation involves direct intervention to slow deterioration processes (Hapsari et al., 2025). Restoration represents the most intensive level of preservation aimed at repairing severely damaged materials

(Aulia & Rachman, 2023). The novelty of this study lies in its holistic application of the Preservation Pyramid Theory within a specialized library context, integrating institutional, environmental, and technical dimensions into a unified analytical framework. Based on these considerations, this study focuses on examining preservation strategies for rare collections at the UPT Bung Hatta Proclamator Library. The study aims to analyze the implementation of preservation practices across all levels of the Preservation Pyramid. It also seeks to identify factors that support or hinder preservation efforts. Through this approach, the study is expected to contribute to the development of more effective and context-sensitive preservation strategies.

METHODS

This study employs a qualitative approach to gain an in-depth understanding of the phenomenon of rare collection preservation strategies within their real institutional context. A qualitative approach is deemed appropriate as the study does not aim to measure variables quantitatively but rather to explore meanings, practices, and experiences as they naturally occur in the field (Pahleviannur, 2022). The research adopts a case study design, which allows for an intensive and holistic examination of a single case, namely the preservation strategies implemented at the UPT Bung Hatta Proclamator Library. This institution is considered a unique and context-specific case due to its role in managing historically significant collections associated with a national figure (Assyakurrohim et al., 2022).

The research design focuses on exploring the phenomenon of preservation practices rather than testing predefined variables. The study is structured around key themes derived from the Preservation Pyramid Theory proposed by Teygeler et al. (2001). These themes include preventive conservation, passive conservation, active conservation, and restoration, which serve as analytical dimensions to examine the implementation of preservation strategies. By using this theoretical framework, the study aims to provide a comprehensive understanding of how preservation practices are carried out and how they are influenced by institutional policies, environmental conditions, and resource availability. The research was conducted at the UPT Bung Hatta Proclamator Library located in Bukittinggi, West Sumatra. The site was selected due to its relevance as a specialized library that manages rare and historically valuable collections. Access to the research site was

obtained through formal procedures, including official permission from the institution. Additionally, the researcher had prior familiarity with the research setting through a six-month internship conducted from July to December 2025, which provided preliminary insights into the institutional context. In qualitative research, the researcher serves as the primary instrument (human instrument), directly engaging in data collection and analysis while maintaining methodological sensitivity and reflexivity (Waruwu, 2023).

Participants in this study were selected using purposive sampling, a technique that involves deliberately choosing individuals based on their relevance and knowledge of the research topic (Pahleviannur, 2022). A total of six informants were involved, representing different roles within the institution, including a key informant (head of collection development and preservation), a main informant (preservation team leader), a technical informant (conservator), supporting informants (librarians from gallery and reference sections), and a validation informant (library user). These participants were selected because they possess direct experience and in-depth understanding of the preservation practices under investigation. The primary instrument of this study is the researcher, supported by a semi-structured interview guide developed based on the Preservation Pyramid framework. Data were collected through three main techniques: observation, in-depth interviews, and documentation. Observation was conducted to examine the physical condition of collections, storage environments, and preservation practices. In-depth interviews were carried out using a semi-structured format, allowing flexibility to explore participants' perspectives in greater detail, with each session lasting approximately 15 to 40 minutes. Documentation was used to gather secondary data, including institutional policies, standard operating procedures, activity reports, and collection condition records. The combination of these techniques enables data triangulation and enhances the comprehensiveness of the findings.

Data analysis in this study follows the interactive model proposed by Miles et al. (2018), which involves data condensation, data display, and conclusion drawing/verification. The analysis process begins with the transcription of interview data, followed by coding to identify relevant themes. The coded data are then categorized according to the four levels of the Preservation Pyramid Theory. Subsequently, the data are presented in a structured narrative format to facilitate the identification of patterns and relationships among categories. The final stage involves drawing conclusions, which are continuously verified through comparison across multiple data sources to ensure

consistency and validity. To ensure data trustworthiness, this study employs source triangulation and technique triangulation. Source triangulation is conducted by comparing information obtained from different informants, while technique triangulation involves cross-checking data collected through observation, interviews, and documentation. These strategies are used to enhance the credibility and reliability of the findings. Additionally, the researcher performs iterative verification to ensure that the interpretations accurately reflect the data. The research was conducted over a period following preliminary observations carried out during the internship from July to December 2025. The main data collection phase extended over several subsequent months, allowing sufficient time for in-depth engagement with the research setting. This extended duration enabled the researcher to capture the complexity of preservation practices and to develop a comprehensive understanding of the phenomenon under study.

RESULTS

Research Findings

This section presents the research findings obtained through in-depth interviews, direct observation, and documentation studies at the Bung Hatta Proclamation Library Technical Implementation Unit. The collected data were analyzed using Miles et al. (2018) interactive analysis model , which includes data condensation, data presentation, and conclusion drawing. The findings are presented systematically following two main sections: an overview of the rare collection and the implementation of preservation strategies based on Teygeler et al. (2001) Preservation Pyramid Theory .

1. Overview of Rare Collections at the Bung Hatta Proclamation Library

a. Characteristics of Collections in the Gallery Room and Reference Room

The Bung Hatta Proclamation Library has two main rooms for storing and servicing rare collections: the Gallery Room and the Reference Room. These two rooms have complementary collection characteristics and service policies, but differ in the types of collections they manage.

The Gallery specifically houses collections related to the Bunghattaan era, specifically those directly connected to the Proclaimer, Mohammad Hatta, including written works, historical documents, and publications depicting his thoughts and track record of

his struggle. The collections in this space are arranged in enclosed cabinets with well-lit spaces.

The storage conditions of the collection in the Gallery Room can be seen in 1



Figure 1 1Hatta's Special Gallery Room
Source: Researcher Documentation, 2026

Informant I_1 explains the collection grouping applied:

" *Usually, this collection is mostly related to the Minangkabau and Minangkabau culture. We usually place the Minangkabau collection in the gallery space so that it can be seen and photographed above* ." ($I_{1,}$ 21/04/2026)

The Reference Room houses a rare collection with a wider scope, including the Minangkabaunese collection, Indonesian history, figures who fought alongside Bung Hatta, as well as old publications that have high historical value.

The condition of the space and storage of collections in the Reference Room is shown in Figure 2.



Figure 2 2of Rare Collections in the Reference Room
Source: Researcher Documentation

I_5 who is on duty in the Reference Room describes the types of collections in the reference room:

" *The rare collections here, such as Minangkabau culture, Minang figures, Indonesian history and friends related to Bung Hatta are in this room* ." (I_5, 04/24/2026)

I_5 also added that the Reference Room's collection includes publications that are 30 years old or older, making them vulnerable to deterioration. Both rooms implement a closed-service system, where users are not permitted to access items independently from the shelves but must be assisted or retrieved by the librarian on duty.

a. Description of Physical Condition of Rare Collection

Based on the results of the researcher's observations and information from informants, the physical condition of the rare collections at the Bung Hatta Proclamation Library UPT shows quite wide variations, ranging from collections that are still in good condition to collections that have experienced various types of damage due to age and environmental conditions.

Types of damage found in the field include: paper brittleness due to natural acidification, loose or detached binding, yellowish or brownish discoloration of the paper, small holes in some pages, and some collections that have damaged *covers* . Examples of the conditions of damage to rare collections can be seen in Figure 3.

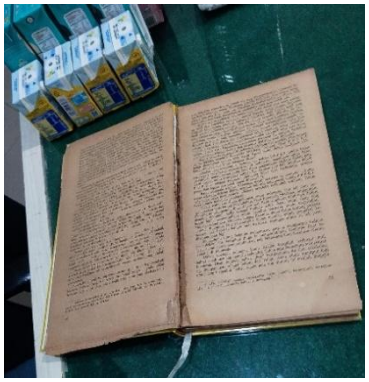


Figure 3 ***Condition of Collection Damage (fragile paper/holes/loose binding)***
Source: Researcher Documentation, 2026

I_4, who was on duty in the Gallery Room, described the state of damage he encountered:

" *There are holes, the paper is already brittle, if it's torn it doesn't look like it's there, the binding has come off because the book is already old* ." (I_4, 04/24/2026)

Meanwhile, I_5, who is on duty in the Reference Room, confirmed similar conditions in the collection in his room:

" *There are some that are torn and some even have loose bindings, because they are not used, they can actually be damaged, but being on the shelf also makes the paper brittle, sometimes just a little touch makes it tear because it is old* ." (I_5, 04/24/2026)

One of the collections with a rather worrying condition that researchers have successfully documented is the book Kumpulan Karangan by Mohammad Hatta, published by the Indonesian Publishing and Book Center, Djakarta-Amterdam-Suraabaja, in 1953. Based on photo documentation obtained during the research, the book *cover* shows a significant change in color to dark brown evenly across the surface, accompanied by stains that identify traces of exposure to moisture.

A white plaster covering part of the title area is a temporary measure. The condition of the list of pages shows more severe damage, with a large tear running down the center of the page, the paper being very yellowed and brittle, and some parts of the text having faded and are difficult to read.

This collection is a real example mentioned by I_2 as a collection that requires the creation of a *portable box* as a temporary protective container because its condition no longer allows for direct re-use.

However, from the librarian's perspective, I_6 stated that in general the condition of the rare collection is still quite well maintained:

" *I've never encountered a collection that was so badly damaged. Overall, the condition is still quite good, although some items appear to be quite old* ." (I_6, 04/28/2026)

1. Teygeler et al.'s (2001) Preservation Pyramid

The implementation of the rare collection preservation strategy at the Bung Hatta Proclamation Library Technical Implementation Unit is analyzed based on the four levels of the Preservation Pyramid Theory proposed by Teygeler et al. (2001), namely preventive conservation, passive conservation, active conservation, and restoration. The following describes the research findings at each level.

a. Preventive Conservation: Environmental Control and Policy

Preventive conservation is the first and most fundamental level in the Preservation Pyramid Theory. At this level, efforts are directed at preventing damage before it occurs through controlling storage conditions, implementing access and collection handling policies, and various other preventative measures. Research findings indicate that the Bung Hatta Library has implemented various preventive conservation practices that reflect institutional awareness of the importance of protecting rare collections.

1) Control of Storage Room Environmental Conditions

Controlling the environmental conditions of the storage space is the most critical aspect in the preservation of rare collections. The Proclaimer Bung Hatta Library uses several primary instruments to control temperature and humidity, namely *a dehumidifier* , *silica gel* , and *a thermohygrometer* . These efforts are carried out routinely as part of the daily procedures for maintaining the collection. I_3, as the conservator, explained the environmental control mechanisms implemented:

" *For this control effort, we have placed thermohygrometers at various points. The reference has thermohygrometers, which can be recorded for temperature and humidity. These are recorded daily by the librarian on duty there. For humidity, we also use silica gel, placed in calico bags because calico bags are porous, so the water content in the air can be captured by the silica gel* ." (I_3, 04/28/2026)

thermohygrometer device used to monitor temperature and humidity is shown in Figure 4.



Figure 4 ***Thermohygrometer in the Rare Collection Room***
Source: Researcher Documentation, 2026

I_1 added that environmental control is carried out by coordinating with the administration department in procuring and placing *dehumidifiers* at points identified as having high humidity:

" *First, we coordinate with the TU to control the temperature by providing dehumidifiers, a number of dehumidifiers in areas with high humidity. We keep them away from light so that the cellulose in the collection doesn't change, and we try our best to avoid light* ." (I_1, 04/21/2025)

Based on observations, *dehumidifiers* were placed in the Reference Room and Gallery Room, while *thermohygrometers* were installed at several points in both rooms. I_4 confirmed that temperature and humidity monitoring was conducted daily at the same time, with a summary submitted to the preservation department at the end of each month. I_5 noted that the average temperature in the Reference Room ranged between 24–25°C with a humidity level of 70–80%. This humidity level is still above the ideal standard recommended for storing paper collections.

The use of a dehumidifier as a humidity control tool can be seen in Figure 5.



Figure 5 ***Dehumidifier in Collection Storage Room***
Source: Researcher Documentation, 2026

Regarding lighting control, measurements are carried out periodically by the preservation team, but I_4 admitted that during his term of office there has been no concrete follow-up in the form of increasing or decreasing light intensity based on the measurement results. It should be noted that the air conditioning conditions between the two rooms are different: the Gallery Room has been equipped with an AC *unit* to help control the temperature, while the Reference Room does not have an AC. This is what caused the user I6 , who accesses the Reference Room more frequently, to observe the following conditions:

" *As far as I can see, the rare collections room doesn't have air conditioning. But the room is still quite comfortable, not too hot or too humid, so the collection still looks well-maintained* ." (I_6, 04/28/2026)

The lack of air conditioning in the Reference Room was recognized by I3 as a limitation that impacted the effectiveness of environmental control. In the Reference Room, temperature control relied entirely on *dehumidifiers* , which were not evenly distributed throughout the room, thus preventing the storage environment from being fully consistent.

2) Rare Collections Handling and Access Policy

Rare collections handling and access policies are a crucial component of preventative conservation, aimed at protecting collections from the risk of damage caused by human factors. The Bung Hatta Proclamation Library implements a closed service system in both the Gallery and Reference Rooms. I_2 explains the officially enforced usage rules:

" *Librarians in general, students, the general public or pupils must report what they need, what books they want, then the librarian will get them, and they cannot take them home, they must read them on the spot, and they are not allowed to take them themselves* ." (I_2, 28/04/2026)

I_1 stated that this policy refers to the preservation guidelines that serve as the library's operational guidelines. I_2 also informed that the library has several written policy instruments, including repair guidelines, media transfer guidelines, and maintenance guidelines, each accompanied by standard operating procedures (SOPs). The existing SOPs were last updated in 2023.

I_3 added that the procedure for using the collection is accompanied by a recording system in the form of a form that must be filled in and signed by the librarian before accessing the collection, so that each collection taken can be tracked by the user.

From the librarian's perspective, I_6 confirms that the procedures felt to be running in accordance with existing provisions:

" *I've been to see the rare collections between the two rooms, but the librarian there took my time to go there directly* ." (I_6, 04/28/2026)

I_3 also explained that education and supervision of library users are part of the service process. If a user is found to be potentially damaging the collection, librarians immediately provide informal education. However, I_4 noted gaps in the implementation of this procedure under certain circumstances, such as overtime when there are no staff on duty, resulting in some users taking items themselves and not returning them to their original locations.

3) Efforts to Prevent Damage to Rare Collections

In addition to environmental controls and access policies, the library also implements various active measures to prevent damage to rare collections, including fumigation, camphorization, and regular cleaning. I_2 describes the preventative measures consistently implemented:

" *There are definitely cleaning efforts, because the books are starting to show mold, there are tears or whatever, maybe we can fix it simply, and the most common prevention against rodents, book lice or insects is by giving them camphor. Then for additional humidity, we also add silica gel to draw out the moisture* ." (I_2, 04/28/2026)

I_3 explains the dusting technique used, which avoids dusting to prevent redistribution of dust particles:

" *We use a vacuum cleaner to clean the dust, so we don't use a feather duster, because if we use a feather duster, the dust will come back. Now, after vacuuming, we add 70% alcohol to make it more sterile. For example, on a shelf, take the books and put them on the bottom first, then spray them with alcohol and then wipe them with a microfiber cloth* ." (I_3, 04/28/2026)

Fumigation is one of the most significant preventative measures for controlling destructive organisms such as fungi, insects, and other pests. I_1 explained that fumigation was previously carried out periodically at least once a year. However, the government's budget efficiency policy, which took effect in 2025–2026, resulted in a complete halt to fumigation activities. I_1 explained the situation:

" *But this year is quite concerning, because our budget is limited, so it's practically zero for this budget. That's the current President's policy, to cut everything, under the Minister of Finance. If this continues for a long period of time, there will definitely be a price we have to pay* ." (I_1, 21/04/2026)

I_5 also confirmed the suspension of fumigation for 2026 due to a lack of budget allocation. I_2 informed that the last fumigation was carried out in the Reference Room in

2024. As a substitute for fumigation, I_1 stated that camphorization and *silica gel replacement* will continue as minimal preventative measures that can be implemented without significant costs.

In addition to these efforts, I_1 revealed that the preservation team also carried out *bleaching* on a small scale as an effort to restore the color of paper that had undergone changes, as well as media transfer activities as a step to save the content of rare collections whose physical condition was very old:

" *We also do bleaching at Mr. Hari's preservation facility, but on a small scale. For torn collections, we do manual mending. For collections that are truly considered old, we usually process the content in addition to physical repairs. We maintain the content through media transfer* ." (I_1, April 21, 2026)

The media transfer activities that have begun reflect a more modern preservation orientation, not only maintaining the physical condition of the collection but also ensuring the continued accessibility of the information contained within. I_4 also confirmed that the status of the media transfer is one of the considerations in determining the priority for handling damaged collections.

b. Passive Conservation: Storage Facilities

Passive conservation is the second level of the Preservation Pyramid, encompassing the physical storage and handling of collections without direct intervention. The main aspects studied include storage systems and facilities, the condition of protective containers, and storage space arrangement. Research findings indicate that passive conservation at the Bung Hatta Proclamation Library is still general and does not fully meet the recommended standards for rare collections.

1) Rare Collection Storage System

The rare collection storage system at the Bung Hatta Proclamation Library UPT as stated by the Head of the Library Book Preservation Working Team is as follows:

" *The storage system is the same as other collections, we don't have any special ones, except for the special collection of Kebunghattaan, yes, it has a special room in the gallery room and it is placed in a cupboard, and the same is true for prevention efforts, we have camphor, silica gel.* " (I_2, 04/28/2026)

I_1 clarifies that collections that have undergone the restoration and strengthening process are treated on a par with ordinary books in terms of storage and service:

" *There's no special system, we just ensure that after restoration, we treat the books like regular books, except they're placed in a lab* ." (I_1, 04/21/2026)

Based on direct field observations, rare collections are stored in the Gallery Room using neatly arranged, closed glass cabinets that allow the collections to be viewed from the outside. In the Reference Room, the collections are stored on open shelves adjacent to the general reference collection. I_4 added that in the Gallery Room, the collections are not tightly packed on the shelves, providing more space between the collections, although the main reason is more aesthetic than preservation considerations:

" *We don't overcrowd it, so we give it space too, so we don't overcrowd it in one row, it's like a normal book. From the start when I was here it was like this, so maybe it's more about aesthetics, because the reference is to a normal shelf, right, not a closed cupboard* ." (I_4, 04/24/2026)

2) Rare Collection Protection Facilities

Regarding the protective equipment used to protect rare collections, the Head of the Library Book Preservation Working Team stated:

" *There's actually nothing here, there's no special protective equipment, except for collections that really can't be bound, that can't be done with anything anymore, we make a kind of portable box, but not all of them are there, only certain collections, like yesterday there was a collection of essays that were really badly damaged* ." (I_2, 04/28/2025)

I_1 explained that the lack of a dedicated archive box was a decision based on the consideration that the collection had been physically strengthened through previous restoration processes, and was therefore deemed adequate to be served as a regular collection. I_3 added that the use of portable boxes was only considered for collections in very poor condition that made binding impossible:

" *If, for example, it has a hole and the binding can't be bound because it's fragile and can't be broken, we've already made it portable, so the book won't get lost or scattered* ." (I_3, 04/28/2026)

Field observations confirmed that the use of these *portable boxes* was very limited and was found only in one or two of the most severely damaged collections. No special folders, acid-free covers, or other protective containers, which are standard components of passive conservation of rare collections, were found. I_4 noted that the treatment of rare collections in this library differs from the standards applied at the National Library in Jakarta, where visitors are required to wear gloves when handling rare collections.

3) Storage Space Arrangement

The storage space for rare collections in this library is arranged with security and preservation in mind. Based on the researcher's observations and the statement of the Head of the P3BP Substance:

" *The arrangement is adjusted to the usual arrangement, because we agreed that the collection should act like a regular book, only it has been strengthened by the addition of Japanese tissue and we have also improved the binding method* " (I_1, 04/21/2026)

I_2 adds that the arrangement of storage space relies more on human supervision than structured physical arrangements:

" *In fact, the arrangement is just a general arrangement here, but it is indeed looked after by the librarian on duty in that room* " (I_2, 04/28/2026)

Based on direct observation, the Gallery Room is arranged with glass cabinets that allow visual inspection of the collection without having to open the cabinets. The room is equipped with *a dehumidifier* , AC *unit* , and *thermohygrometer* . The Reference Room implements a system where the shelves of rare collections are in an area accessible only to staff. Lighting in both rooms comes from *fluorescent lamps* installed in the ceiling, without the addition of special UV filters to protect the collection from damaging light exposure.

c. Active Conservation: Direct Physical Intervention

Active conservation is the third level, involving direct intervention on collection materials to slow or halt ongoing deterioration. The following presents research findings related to the implementation of active conservation at the Bung Hatta Proclamation Library.

1) Routine Care of Rare Collections

Routine maintenance of the rare collections at the Bung Hatta Proclamation Library is carried out by a preservation team coordinated by the Head of the Library's Book Preservation Working Group. Based on an interview with the Head of the Preservation Working Group:

" *Regarding the routine maintenance mentioned earlier, we carry out camphorization or provide camphor on each shelf shelf near the collection, as well as routinely changing the silica gel every 3–4 months* ." (I_2, 04/28/2026)

I_1 explains that routine maintenance activities are carried out periodically depending on budget availability and the established schedule:

" *Our conservation team periodically performs maintenance, depending on budget availability and scheduling. At a minimum, we dust the book collection and replace the silica gel to ensure adequate humidity. We also apply camphor to keep insects away from our collection* ." (I_1, 04/21/2026)

I_3 explained that the frequency of maintenance is adjusted to the conditions of each storage location, with dust cleaning and *silica gel replacement* scheduled quarterly, although it can be adjusted earlier if the collection's condition requires it. Routine maintenance activities include: dust cleaning using *a vacuum cleaner and 70% alcohol, silica gel* replacement every 3–4 months, and camphorization using *naphthalene* camphor . Library user I_6 also confirmed that he had witnessed staff performing collection maintenance directly:

" *I've seen staff tidying and cleaning the collection, such as removing dust or checking the condition of the books directly* ." (I_6, 04/28/2026)

Regarding activity documentation, based on information from I_2, the library has a maintenance guideline that serves as a reference for implementing routine activities. However, the researchers did not obtain a detailed maintenance schedule document during the documentation study, indicating that recording routine maintenance activities has not been carried out consistently and systematically.

2) Handling Damage to Rare Collections

The procedure for handling rare collections that have been damaged in this library is carried out in the manner as explained by the Head of the Library Book Preservation Working Team:

" *If the procedure for handling rare collections, for example, if the damage is to the binding, then of course we first remove the old binding, we clean it, if there are any tears we patch it, if there are any holes we patch them too. Then we replace the binding, for the binding we do not use iron or staples, we sew or glue it. If for example the damage is to the cover, we replace the cover, we renew the cover* ." (I_2, 28/04/2026)

Information 1 $_2$, is in line with the written procedures listed in the official document Library Materials Preservation Procedures (CHAPTER III) belonging to the Proclaimer Bung Hatta Library UPT which researchers obtained through documentation studies. The applicable library materials repair procedures consist of six stages depicted in the flowchart, namely: (1) The conservator receives and checks the list of damaged library

materials identified and evaluated by the service librarian; (2) The conservator receives damaged library materials that need repair; (3) The conservator scans the damaged book cover and analyzes whether there are any torn or fragile parts; (4) The conservator makes a hard cover according to the size of the book and prepares the hard cover with the book; (5) The conservator repairs the book block according to the type of binding, whether glue binding, single-seam stitched binding, or multi-seam stitched binding; and (6) The conservator patches and/or connects torn or fragile parts. The existence of this written procedure document shows that the handling of physical damage to the collection has an officially documented and structured workflow, as shown in Figure 6

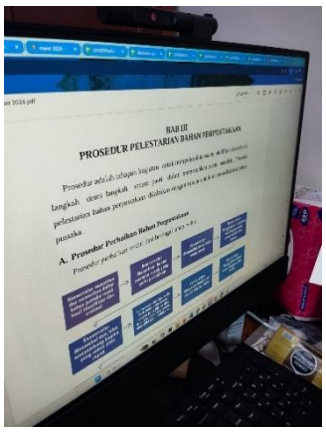


Figure 6Procedures for Repairing Library Materials
Source: Official Document of the Bung Hatta Proclamation Library UPT, 2026

I_3 added another minor damage handling procedure:

" *If there's dust, we clean it with a brush. If there are stains, we erase them with an eraser. If the cover is completely destroyed, we have to produce a hard cover so the contents inside are also safe* ." (I_3, 04/28/2026)

I_1 explains the handling of collections that have experienced further damage such as discoloration and fragility:

" *Looking at the damage, if it's torn and brittle, we'd do it manually to strengthen the cellulose, which we usually do by deacidification. Usually, if the color has changed too much, too brown, then we'll do deacidification to return it to its original condition, in addition to also sticking Japanese tissue to thicken each page* ." (I_1, 211/04/2026)

The process for handing over collections requiring care from the service to the preservation department involves first collecting and recording data. I_5 explains the procedure:

" *The books are first recorded here and collected. If there are a lot of them, for example, a trolley or 10 books, if the preservation center can accept the books, they will be delivered immediately. If not, the books will be removed from the shelves and separated first* ." (I_5, 04/24/2026)

Based on observations and documentation obtained during the research, the researcher found concrete evidence of the handling that had been carried out on the rare collection of Buku Kumpulan Karya (Collection of Essays) by Mohammad Hatta published in 1953, one concrete example of a collection that is in the process or has received attention from the preservation team. The physical condition of the book, which shows a very yellowed cover, a large tear on the table of contents page, and fragile paper, reflects a level of deterioration that requires immediate attention. No detailed written documentation was found regarding the list of all collections that have been or are being handled in a certain period, indicating the need for a more structured and consistent handling recording system.

3) Human Resource Competence in Active Conservation

Regarding human resource competency in implementing active conservation, the Head of P3BP Substance stated:

" *We have experts in the field of chemistry, who are actually called conservators, not librarians anymore. The head, as manager, is indeed a librarian, but there are also several librarians who are trained by our conservators, so they learn on the job, so to speak. There are three librarians and two conservators* ." (I_1, 04/21/2026)

I_3 confirmed that of the entire team, only two people had undergone formal preservation training, namely himself and another fellow conservator:

" *Yes, there are already some people here who have participated in the preservation training, namely Mutia and me. As for the other friends, it's more about just learning, working while studying* ." (I_3, 04/28/2026)

I_2 explained that librarians generally have gained a basic knowledge of preservation through formal education in library science, but lack specific technical expertise in conservation. I_4 admitted to having no specific training in preservation and relying on

guidance from conservators when encountering problems with collections. This situation illustrates the unequal distribution of competencies among team members who handle rare collections.

d. Restoration: Restoring the Physical Condition of Rare Collections

Restoration is the highest and most intensive level in the Preservation Pyramid Theory, namely the effort to restore severely damaged collections to a stable and usable condition. The following presents research findings related to the restoration implementation at the Bung Hatta Proclamation Library Technical Implementation Unit.

1) Implementation of Rare Collection Restoration

In relation to the implementation of restoration of rare collections, the Head of the P3BP Substance stated that:

" *It's been restored because the collection is old, right? The restoration involved applying Japanese tissue, then reducing the acid level, and finally rebinding. Those are the steps often taken* ." (I_1, 04/21/2026)

I_2 confirmed that restoration activities were carried out quite frequently and included various forms of physical intervention:

" *I have, in fact, often. For example, if the book we mentioned earlier is damaged, badly damaged, or has a damaged binding, we replace it. We restore the cover but tidy up the contents. For example, if the page is torn or missing but the information is still there, we repair it by laminating it, or simply by manually repairing it.* " (I_2, 04/28/2026)

I_3 details the restoration capacity of the preservation team, including the techniques they have mastered:

" *Here we have deacidification, acid reduction, if for example it has a hole we can patch it, if it is torn we can connect it with Japanese tissue, and if it is fragile we can also laminate it, actually it is quite complete. And as for binding, we can already bind it* " (I_3, 04/28/2026)

The various binding techniques mastered include regular glue binding, single-thread stitching, *multi-thread stitching* , and even the cutting (slicing) technique, which resembles a photocopying method. The restoration process using the *multi-thread binding technique* is shown in Figure 7.



Figure 7 7-drain Binding Technique Restoration
Source: Researcher documentation, 2026

I_3 describes the intensity of the restoration work encountered:

" *Working on preserving a book can't be done quickly, it depends on the damage. If it's badly damaged and thick, it won't even be finished in a week. I once worked on a book that took a year. The most time consuming was when it was getting better, it was thick, then it got better but gradually got worse, and even then it couldn't be opened because I had to wait for it to dry first* " (I_3, 04/28/2026)

A documentation study revealed no detailed restoration reports recording collection titles, dates, and types of interventions. This suggests that restoration activity recording needs to be improved as part of a more comprehensive preservation management system.

2) Criteria for Determining Restored Collections

In determining which rare collections require restoration, the library uses certain criteria as explained by the Head of P3BP Substance:

" *Usually based on the physical condition of the collection, based on reports from friends from the service, because they as the people who serve the collection will definitely be directly faced with the conditions that occur, be it fragility, color changes, or changes in humidity, they will definitely immediately consult with friends in preservation* " (I_1, 04/21/2026)

I_2 added historical value-based criteria as a priority consideration for restoration:

" *It's badly damaged, and the paper is fragile, and it has historical value, so it's truly valuable, for example, a collection of Bung Hatta's writings or Greek thought, which are badly damaged, so we are restoring them* ." (I_2, 04/28/2026)

I_4 adds another dimension to the determination criteria, namely by checking the media transfer status before deciding on restoration:

" *Those that are moldy, some that are rusty, some that have loose bindings, some that have fragile paper, we check whether they have been converted to media or not, before they are completely damaged. Those that haven't been converted to media, we record so that they can be converted to media immediately* " (I_4, 04/24/2026)

I_3 explained that in principle there is no threshold of damage that must be met before a collection is included in the restoration list, every collection identified as having damage, regardless of the level, is immediately followed up.

The narrative findings demonstrate the alignment between the criteria used and the actual conditions of rare collections in the field. The reporting system from service librarians to the preservation team serves as an effective early detection mechanism, although regular recording of collection conditions in a standardized format has not been consistently implemented.

3) Restoration Implementation Mechanism

Regarding the restoration implementation mechanism, the Head of the P3BP Substance explained:

" *The restoration is being done independently, except for the paper pulp attachment, which we don't yet have. The machine takes up quite a lot of space; it's located at the National Library in Jakarta. That's what's difficult to implement here, both in terms of budget, space availability, and the human resources required to operate it* ." (I_1, 04/21/2026)

I_2 confirms that all restoration activities were carried out independently by an internal team, without involving third parties:

" *Independent, we don't use other parties because, again, the National Library is for convention purposes. We really have to be independent. We can't use third parties, especially in a strategic location like this* ." (I_2, 04/28/2026)

I_3 identified technical limitations that hampered the restoration process, including the lack of adequate fume hoods and *bleaching equipment* . The lack of fume hoods, in particular, limited the use of certain chemicals needed to remove tape from old plastic covers, forcing the team to use slower and less effective manual methods.

Based on these findings, it can be concluded that the restoration mechanism at the Bung Hatta Proclamation Library Technical Implementation Unit is entirely self-sufficient, with sufficient technical capacity to handle light to moderate damage. For advanced

damage requiring specialized equipment such as a pulping machine, there is currently no formalized reference solution available.

DISCUSSION

This study aims to describe the preservation of library materials, the factors that cause damage, and the obstacles faced by librarians in preserving the Postgraduate Library of Padang State University. The method used is descriptive qualitative data collection techniques through interviews and documentation. The results showed that the preservation activities carried out include cleaning dust, tidying up books, regulating room temperature, and checking collections. Factors causing damage to library materials include environmental factors such as light, biological factors, especially termites and insects, and Human Factors. Constraints faced by librarians in the preservation is the lack of budget, limited library personnel, and lack of complete preservation equipment. It is recommended that libraries improve the implementation of preservation, conduct training for librarians, provide special rooms and funds, and equip preservation equipment as needed.preservation, library materials, damage factors, preservation constraints on the preservation of rare collections in university libraries found that environmental control was the most frequently implemented aspect, but also the one with the greatest gap between practice and ideal standards. This is consistent with findings at the Bung Hatta Proklamator Library, where the measured humidity level (70–80%) was still above the threshold recommended by international standards for storing paper collections (30–50%).

Aulia & Rachman (2023) highlighted that the effectiveness of preventive conservation is largely determined by consistent implementation and the availability of adequate infrastructure. In the context of the Bung Hatta Proclamation Library Technical Implementation Unit (UPT), consistent daily environmental monitoring has been established, but infrastructure, such as the building's open gaps and the limited reach of the existing dehumidifier, are significant limiting factors. This condition aligns with the findings of the Hapsari et al. (2025) stated that limited physical building infrastructure is one of the main obstacles in implementing preventive conservation in libraries in Indonesia.

Supporting factors for the implementation of preventive conservation in this library are established institutional awareness, the existence of standard operating procedures (SOPs), and a well-maintained daily routine for monitoring environmental conditions.

Meanwhile, the main inhibiting factors are the building's condition, which does not yet allow for optimal environmental control, limited equipment, and the suspension of fumigation due to budget-saving policies, which directly impact the collection's vulnerability to destructive organisms.

1. Passive Conservation

The implementation of passive conservation at the Bung Hatta Proclamation Library UPT is characterized by a storage system that does not yet use special facilities, the lack of acid-free archive boxes, and spatial planning that relies more on human resource supervision than on physical protection of infrastructure. explain that passive conservation includes the use of appropriate storage containers and proper collection arrangement to protect collections from potential damage due to use and environmental factors. Compared to recommended standards, such as the use of acid-free boxes, rust-resistant metal shelves, and the physical separation of rare collections from general collections, the conditions at the Bung Hatta Proclamation Library Unit show a significant gap in passive conservation. Rare collections stored without special protective containers after restoration are at risk of reoxidation and acid contamination from the surrounding air, which can accelerate the degradation process. Sharlino & Nurizzati (2024) found that libraries implementing a closed service system, such as the Bung Hatta Library, significantly reduced the frequency of damage due to improper handling. This is a positive aspect of passive conservation that should be maintained and strengthened. However, gaps in the system's implementation, such as those that occur under certain conditions when there are no staff on duty, need to be addressed through improved procedures and more systematic oversight. The correlation between the condition of the rare collections found, in the form of paper fragility, discoloration, and binding damage, with the effectiveness of the passive conservation carried out shows that investment in better storage facilities, especially acid-free archive boxes, is a priority that needs to be realized immediately, although on a gradual scale according to budget availability.

2. Active Conservation

Active conservation carried out at the Bung Hatta Proclamation Library UPT includes dust cleaning with *a vacuum cleaner* and 70% alcohol, camphorization, *silica gel replacement* every 3–4 months, handling minor damage through manual *mending* and *deacidification* , and fumigation which was previously carried out at least once a year. Hapsari

et al. (2025) explained that active conservation includes collection cleaning activities and repairing minor damage which requires adequate technical expertise from the implementer. The presence of a formally trained conservator with a chemical background is an institutional advantage that not all similar libraries have . Nisa et al. (2025) on the condition of collection damage in libraries with similar characteristics found that paper-based collections in tropical environments with high humidity require a higher frequency of active maintenance than is generally implemented. In this context, the cessation of fumigation at the Proclamation Bung Hatta Library UPT due to budget efficiency policies is a serious concern, considering that the humid tropical environment of Bukittinggi inherently increases the risk of biological attacks on collections. Further analysis showed that the active conservation measures undertaken were not fully commensurate with the extent of damage found in the rare collections. Damage, including holes in some collections and significant fragility of the paper, required more intensive and structured treatment. The uneven distribution of technical competence among team members also potentially led to inconsistencies in the quality of care provided to the collections.

3. Restoration

Regarding the implementation of restoration, research findings indicate that the Proclaimer Bung Hatta Library UPT has implemented various restoration techniques independently, including Japanese tissue attachment, deacidification, lamination, and various rebinding methods. The entire process is carried out by an internal team without involving third parties. Teygeler et al. (2001) emphasized that restoration is the last action taken when lower levels fail to prevent severe damage, and must be carried out by trained and certified experts considering the complexity of the procedure and the risk of further damage. The ability to carry out restoration work independently is an achievement that surpasses the average for similar libraries. Aulia & Rachman (2023) found that most of the libraries they studied still rely on external institutions or the National Library for restoration activities, requiring more time and coordination. The independent capacity of the Bung Hatta Proclamation Library Unit (UPT Proklamator Bung Hatta Library) allows for a more rapid response to the restoration needs of rare collections. However, limitations in advanced restoration techniques, particularly the lack of pulping machines and fume hoods, limit the types of damage that can be addressed locally. Collections with large holes or damage requiring paper fiber replacement cannot be addressed without such equipment. Compared to the required standards, the restoration carried out at this library already meets

basic criteria, but needs to be developed towards a more comprehensive approach through the procurement of more complete equipment and ongoing human resource development.

Recommendations for restoration development at the Bung Hatta Proclamation Library Technical Implementation Unit (UPT) need to be developed contextually, taking into account actual conditions on the ground. Based on interviews, librarians stated that the condition of the rare collections can currently be managed internally, thus not requiring a referral mechanism to an external institution. This indicates a fairly good level of independence in the restoration process. However, from a long-term preservation management perspective, the existence of a referral mechanism still needs to be considered as an anticipatory measure in the event that damage to the collections is discovered at a level that cannot be handled locally. Furthermore, the procurement of fume hoods needs to be prioritized as an initial step in strengthening restoration facilities, considering their crucial role in supporting chemical-based restoration processes and their relatively more affordable cost compared to pulp machines. Furthermore, the development of a standardized restoration recording system is crucial to support the continuous (*longitudinal*) monitoring of collection conditions and to serve as a basis for evaluating the effectiveness of preservation measures. Overall, the implementation of the rare collections preservation strategy at the Bung Hatta Proclamation Library Technical Implementation Unit (UPT) demonstrates that all levels of the Preservation Pyramid Theory have been implemented, from preventive conservation to restoration. However, the level of implementation is not uniform across all levels. Preventive and active conservation have been progressing quite well, despite infrastructure and budget constraints. Meanwhile, passive conservation shows the most significant gap, lacking adequate storage facilities. At the restoration level, libraries have the advantage of independent implementation, but are still limited to basic to intermediate techniques. Thus, the preservation strategy implemented can be categorized as developing but not yet fully integrated optimally, because there is still an imbalance between levels in the preservation pyramid.

CONCLUSION

Based on the findings of this study, it can be concluded that the UPT Bung Hatta Proclamator Library has implemented preservation strategies for rare collections by adopting the four hierarchical levels of the Preservation Pyramid Theory proposed by

Teygeler et al. (2001), namely preventive conservation, passive conservation, active conservation, and restoration, although the level of implementation across these dimensions varies in terms of intensity, consistency, and effectiveness. Preventive conservation emerges as the most dominant aspect, as reflected in environmental control measures using dehumidifiers, thermohygrometers, silica gel, and camphorization, which are supported by routine daily monitoring of temperature and humidity as well as the implementation of a closed access system to limit direct interaction between users and collections, while the availability of standard operating procedures and preservation guidelines further strengthens preventive practices as an operational foundation, however, the effectiveness of these efforts is still constrained by several factors, particularly the building condition that is not fully climate-controlled and the discontinuation of fumigation activities in 2026 due to national budget efficiency policies, resulting in humidity levels that remain above the recommended standards for paper-based materials and potentially increasing the risk of long-term deterioration. In terms of passive conservation, the library has consistently implemented a closed access system as a protective mechanism, yet the storage facilities have not fully met recommended standards due to the absence of comprehensive use of acid-free archival boxes, indicating a gap between existing practices and ideal preservation standards. Meanwhile, active conservation has been implemented relatively well and is supported by competent human resources, including conservators with a chemistry background, with routine maintenance conducted every three to four months involving dust cleaning, silica gel replacement, and camphor application, as well as minor damage treatment through manual mending, deacidification, and the use of Japanese tissue, although budget constraints leading to the suspension of fumigation activities represent a risk factor that needs to be addressed. In the restoration aspect, the library demonstrates a relatively advanced capability as it is able to perform restoration independently without relying on external parties through techniques such as deacidification, lamination, Japanese tissue reinforcement, cover replacement, and rebinding, which reflects a high level of technical capacity compared to similar institutions, and when supported by consistent preventive conservation practices, the condition of rare collections can still be maintained without reaching a critical level of deterioration. Overall, the preservation strategy implemented by the library tends to prioritize preventive conservation as its main foundation, yet it has not been fully integrated across all levels of the Preservation Pyramid, thus requiring more systematic improvement efforts, including

periodic updates of preservation SOPs to ensure adaptability to current conditions, gradual provision of acid-free archival storage materials to strengthen passive conservation, and improved consistency in documentation and monitoring systems to support more structured and sustainable preservation management, in addition, support from the National Library of Indonesia as the parent institution is crucial, particularly in maintaining adequate budget allocation for preservation activities, as the suspension of fumigation and routine maintenance due to budget efficiency poses significant risks to rare collections with high historical value, while continuous training programs for librarians and preservation staff are also necessary to enhance human resource capacity, and for future researchers, this study can serve as a foundation for further investigations on the effectiveness of digital conversion as a long-term preservation strategy as well as comparative studies across regional libraries to produce more comprehensive and context-sensitive policy recommendations.

REFERENCES

Aulia, F., & Rachman, Y. B. (2023). Preservasi Koleksi Buku Langka di Perpustakaan "X". *Jurnal Ilmu Informasi, Perpustakaan dan Kearsipan, 25*(1), Article 4. https://doi.org/10.7454/JIPK.v25i1.004

Badan Nasional Penanggulangan Bencana. (2024, April 16). *Buku Data Bencana Indonesia tahun 2023*. https://bnpb.go.id/buku/buku-data-bencana-indonesia-tahun-2023

Barman, M. S., & Singh, D. D. V. (2024). Bridging knowledge: The role of preservation materials in safeguarding library collections and enhancing cultural continuity. *Central Asia and the Caucasus, 25*(1), 46–52. https://ca-c.org/index.php/cac/article/view/1885

Elnadi, I. (2021). Preservasi dan Konservasi sebagai Upaya Pustakawan Mempertahankan Koleksi Bahan Pustaka. *THE LIGHT: Journal of Librarianship and Information Science, 1*(2), 64–71. https://doi.org/10.20414/light.v1i2.4362

Hapsari, D. P., Trisnawati, S. S., & Putra, S. I. E. (2025). *Penerapan Metode Piramida Preservasi sebagai Upaya Menjaga Eksistensi Koleksi Indoor di Museum Satria Mandala* [Sarjana thesis, Universitas Brawijaya]. https://repository.ub.ac.id/id/eprint/241991

Harefa, H. S., Sirait, R. T. M., & Ginting, M. (2024). Pendampingan Preservasi dan Konservasi Bahan Pustaka di Perpustakaan SMP Swasta Nasrani Belawan Medan. *Altifani: Jurnal Pengabdian Masyarakat Ushuluddin, Adab, dan Dakwah, 4*(1), 9–26. https://doi.org/10.32939/altifani.v4i1.3946

Hotimah, A. H., Damayani, N. A., Khadijah, U. L. S., Rodiah, S., Samson, C. M. S., Rukmana, E. N., & Khoerunnisa, L. (2023). Analisis Kegiatan Preservasi Bahan Pustaka di Perpustakaan Universitas Trisakti. *Jurnal Pustaka Budaya, 10*(2), 79–87. https://doi.org/10.31849/pb.v10i2.12329

Makmur, T., Suadi, D., & Samsudin, D. (2021). Kajian Preservasi di Indonesia. *UNILIB: Jurnal Perpustakaan, 12*(1). https://doi.org/10.20885/unilib.vol12.iss1.art6

Miles, M. B., Huberman, A. M., & Saldaña, J. (2018). *Qualitative data analysis: A methods sourcebook* (4th ed.). SAGE Publications.

Nisa, N., Rahmah, E., & Marlini, M. (2025). Analisis Kerusakan dan Rekomendasi Konservasi pada Buku Menudju Kemerdekaan/Towards Independence Koleksi UPT Perpustakaan Proklamator Bung Hatta. *TSAQOFAH, 6*(1), 905–924. https://doi.org/10.58578/tsaqofah.v6i1.8409

Pahleviannur, M. R., De Grave, A., Saputra, D. N., Mardianto, D., Hafrida, L., Bano, V. O., Susanto, E. E., Mahardhani, A. J., Amruddin, Alam, M. D. S., Lisya, M., Ahyar, D. B., & Sinthania, D. (2022). *Metodologi penelitian kualitatif*. Pradina Pustaka. https://doi.org/10.31237/osf.io/jhxuw

Perpustakaan Nasional Republik Indonesia. (2020). *Peraturan Perpustakaan Nasional Republik Indonesia Nomor 6 Tahun 2020 tentang Organisasi dan Tata Kerja Unit Pelaksana Teknis Perpustakaan Proklamator Bung Hatta*. https://peraturan.bpk.go.id/Details/254960/peraturan-perpusnas-no-6-tahun-2020

Putri Abduh, Y. N., Khadijah, U. L. S., Samson, C. M. S., & Khoerunnisa, L. (2023). Kegiatan Konservasi Preventif yang Diterapkan oleh Perpustakaan Fakultas Ilmu Sosial dan Ilmu Politik Universitas Padjadjaran. *LIBRIA, 14*(2), 215–246. https://doi.org/10.22373/16812

Rifauddin, M., & Pratama, B. A. (2020). Strategi Preservasi dan Konservasi Bahan Pustaka di Dinas Kearsipan dan Perpustakaan Kabupaten Trenggalek. *Jurnal Ilmu Perpustakaan (JIPER), 2*(1), 17–23. https://doi.org/10.31764/jiper.v2i1.2218

Sasmitasari, A. S. A., & Handayani, N. S. (2022). Strategi Preservasi dan Konservasi Bahan Pustaka di Dinas Perpustakaan dan Kearsipan Kabupaten Lamongan. *Tibanndaru: Jurnal Ilmu Perpustakaan dan Informasi, 6*(1). https://doi.org/10.30742/tb.v6i1.1794

Sharlino, M. Z., & Nurizzati, N. (2024). Preservasi Bahan Pustaka Menggunakan Teori Piramida Preservasi di Perpustakaan Pascasarjana Universitas Negeri Padang. *ARZUSIN, 4*(4), 687–697. https://doi.org/10.58578/arzusin.v4i4.3421

Teygeler, R., de Bruin, G., Wassink, B., & van Zanen, B. (2001). *Preservation of archives in tropical climates: An annotated bibliography*. International Council on Archives.

Waruwu, M. (2023). Pendekatan Penelitian Pendidikan: Metode Penelitian Kualitatif, Metode Penelitian Kuantitatif dan Metode Penelitian Kombinasi (Mixed Method). *Jurnal Pendidikan Tambusai, 7*(1), 2896–2910. https://doi.org/10.31004/jptam.v7i1.6187

Wickens, J. D. J. (2024). Preventive conservation: Continuously defining itself at the crossroads of theory and practice. *Journal of the American Institute for Conservation, 65*(1), 3–15. https://doi.org/10.1080/01971360.2024.2348924