

EVALUATION OF ANCIENT MANUSCRIPT PRESERVATION AT THE MPU TANTULAR STATE MUSEUM

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Abstract

Many ancient manuscripts in Indonesia are experiencing damage, neglect, and even illegal trade, endangering their status as cultural heritage. The Mpu Tantular State Museum, which houses 334 manuscripts, plays a crucial role in safeguarding these collections. However, a comprehensive evaluation of its preservation practices has never been conducted. This study aims to evaluate the preservation of ancient manuscripts at the Mpu Tantular State Museum using the CIPP (Context, Input, Process, Product) evaluation model. A qualitative descriptive approach was employed, with data collected through observation, in-depth interviews with three key informants, and documentation. Source triangulation was conducted through policy documents, activity reports, and field observations to ensure data validity. The results show that in the context aspect, the museum has established clear objectives and supporting policies, although a structured evaluation system is lacking. In terms of input, limitations remain in human resources, facilities, and budget allocation. The preservation process is conducted through traditional yet systematic methods, such as cleaning, citronella oil application, and fumigation, supported by external collaboration. The product aspect demonstrates positive outcomes in maintaining manuscript condition and academic utilization, although public access remains limited. Theoretically, this study contributes to expanding the application of the CIPP model in the field of manuscript preservation by adapting it to the context of regional museums, offering a new analytical perspective that bridges the gap between ideal preservation standards and practical implementation in local cultural institutions.

Keywords: ancient manuscripts; preservation; CIPP evaluation; Mpu Tantular State Museum; cultural heritage.

INTRODUCTION

Ancient manuscripts, or manuscripts, are the products of thought, ideas, and cultural heritage, providing tangible evidence in the form of records of past cultures, such as literature, law, religion, medicine, engineering, and customs, all of which hold strategic value in various

fields (Alamsyah, 2022). Law of the Republic of Indonesia No. 43 of 2007 affirms that ancient manuscripts hold significant value for national culture, history, and science and must be preserved. Data from the catalog of ancient manuscripts from the Indonesian archipelago records 82,158 copies distributed in Indonesia and 39,397 copies abroad, with the largest collection at the National Library (Perpusnas) at 12,710 copies (Harian Jogja, 2022). Furthermore, many ancient manuscripts remain neglected, damaged, soiled, or even lost due to storage without protection or preservation. This phenomenon demonstrates the need for efforts to care for, maintain, and preserve ancient manuscripts.

Preservation efforts aim to preserve ancient manuscripts so that they can be used in their original form. The National Library recorded that as of 2022, only 24% of ancient manuscripts in Indonesia had been preserved (Antara, 2022). However, 76% of ancient manuscripts are still at risk of damage or loss. Various methods are being employed, for example, the Rekso Pustoko Library uses vetiver and lemongrass, as well as ventilation to prevent biological damage (Rachman, 2017). The Sonobudoyo Museum Library uses freezing techniques to eradicate insects without damaging the manuscript structure (Setyawati, 2023). Furthermore, the Codex4D project uses holograms to create 4D models of ancient manuscripts, enabling contactless interaction (Schettino et al., 2023).

However, effective preservation efforts cannot be maximized without an evaluation process. Evaluation of ancient manuscripts is the first step in providing an overview of their physical condition, content integrity, and preservation needs, while also identifying their academic, historical, and cultural value. Therefore, an institution with the capacity to properly care for and maintain ancient manuscripts is needed, one such institution being the Mpu Tantular State Museum.

Table 1. Number of ancient manuscripts in the Mpu Tantular Museum

Types of Ancient Manuscripts	Jumlah
Paper	187
Daulang	72
Lontar	63
Wood Bark	1

The Mpu Tantular State Museum is a state museum in Sidoarjo, once voted the best museum in East Java in 2014. It boasts a collection of 334 manuscripts, as detailed in Table 1 above. Furthermore, 13 Primbon Tengger manuscripts have been recognized as part of the National Collective Memory (IKON) 2024, and subsequently the Memory of the World, signifying their high historical and philological value (Taselan, 2024). Initial observations indicate that only 100 manuscripts, or less than 50%, have been preserved, and only one philologist is responsible for them. Evaluation is also limited to employee performance, not preservation effectiveness. This demonstrates the urgency of evaluating ancient manuscript preservation, given the lack of specific research addressing the evaluation of ancient manuscript preservation at the Mpu Tantular State Museum.

Therefore, this study will use the CIPP Evaluation Model from Stufflebeam & Shinkfield (2007), which consists of context, input, process, and product. This model is able to provide a comprehensive overview of preservation evaluation so that each stage can be clearly identified.

The CIPP evaluation model has been used in several studies of ancient manuscript preservation, such as Sulastri's (2021) study at the Balaputra Dewa Museum in Palembang and Nurwahyuningsih & Ismayati's (2019) study at the National Library. Furthermore, Fuadi's (2019) study at the Aceh Museum did not use the CIPP model, and Dika's (2024) study at the Mpu Tantular State Museum reviewed preservation activities without evaluating their effectiveness. Based on previous studies, it appears that ancient manuscript preservation evaluations have been conducted in various museums with varying results. However, there has been no comprehensive evaluation assessing the success of preservation at the Mpu Tantular State Museum using the CIPP model. Therefore, this research was conducted to fill this gap in order to obtain results regarding the success and challenges of preserving ancient manuscripts at the Mpu Tantular State Museum and to expand the application of the CIPP model in preserving ancient manuscripts in Indonesia, which is still rarely done.

RESEARCH METHOD

This study uses a descriptive qualitative method to describe the preservation conditions of ancient manuscripts, including work procedures, equipment used, and the impact of the methods applied. Data collection was conducted through interviews, observation, and documentation to obtain comprehensive information based on the four variables in the CIPP Evaluation Model: context, input, process, and product.

Research informants were selected through purposive sampling, considering relevant roles and experiences, and representing the core structure of preservation implementers: the Head of the Collection and Conservation Section (Ida) as the policymaker, the Philology Assistant (Ani) as the technical implementer, and the Collections Keeper (Su) as the field implementer. The number of informants was limited because only those with direct roles and authority in all stages of preservation were included. Data validity was validated using source triangulation through policy documents, activity reports, and field observations.

Data analysis used the Miles et al. (1994) model, which includes four stages: (1) Data collection through direct observation, interviews, and documentation categorized into the four CIPP components; (2) Data reduction was carried out by sorting data according to the four CIPP components; (3) Descriptive data presentation that shows the relationships between evaluation components and compares them with previous research; (4) Conclusions were drawn based on data interpretation and verification by comparing the data with field facts to ensure validity. This research was conducted at the Mpu Tantular State Museum, adjusting to the schedule and availability of the informants.

RESULT AND DISCUSSION

Context Evaluation

Context evaluation focuses on the objectives, priorities, and needs of the preservation program. The results indicate that the Mpu Tantular State Museum has implemented this component quite well by identifying preservation needs and formulating relevant policies. This finding aligns with Stufflebeam (2007), who stated that context evaluation plays a role in guiding program target setting through needs analysis and planning. However, activity evaluation remains limited and has the potential to hinder data-driven decision-making. The results of the context evaluation in this study are broken down into the following indicators:

Objectives and Activity Needs

The primary objective of ancient manuscript preservation at the Mpu Tantular State Museum is to maintain the preservation of ancient manuscripts as authentic evidence of the nation's history and cultural heritage. This is evident in the implementation of Standard Operating Procedures (SOPs), the division of tasks among staff, regular cleaning, collaboration with external agencies, the use of social media for public education, and the evaluation of employee performance using SKP (Standard Work Unit) covering conservation, utilization, and service as part of the annual assessment. As stated by the informant in quotes 1 and 2 below:

Quote 1:

"The main goal of preservation is to maintain its preservation as authentic evidence of history, cultural heritage, and sources of knowledge that document past civilizations."

(Ida)

Quote 2:

"The main goal is to preserve all cultural heritage objects so that they can be exhibited again and provided with information to visitors." (Ani)

Both quotes align with the preservation goals set by UNESCO (2016), which emphasizes the importance of preserving documents of historical, cultural, and knowledge value so that they remain accessible now and in the future. Thus, the preservation goals at the Mpu Tantular State Museum align with international preservation principles. To achieve these goals, preservation requires adequate human resources and standardized facilities. However, the museum faces limited human resources, so maintenance is prioritized, prioritizing the most vulnerable manuscripts. This condition is evident in the following quote:

Quote 3:

"Preservation is a process that requires precision and diligence because it requires regular maintenance, such as routine cleaning, temperature control, and safe and comfortable storage. However, due to limited human resources, we use a priority scale." (Ida)

Quote 3 above demonstrates that the priority scale is an adaptation to field conditions and indicates a context-input gap, namely an imbalance between needs and resources.

Policy and Activity Evaluation

The preservation policy at the Mpu Tantular State Museum is based on procedures and standard operating procedures (SOPs) appropriate to field conditions. Access to ancient manuscripts is restricted through formal request letters and the drafting of Memorandums of Understanding (MoUs) with institutions such as the National Library and the East Java Library. This policy aims to safeguard the manuscripts from the risk of damage and misuse. As explained in quotes 4 and 5:

Quote 4:

"The policy remains based on procedures and SOPs, meaning it requires formal letters and supporting data that can strengthen our role as managers." (Ida)

Quote 5:

"One of the preservation policies is the creation of an MoU between the East Java Library and the National Library." (Ani)

The policies in quotes 4 and 5 are appropriate steps to protect ancient manuscripts from damage and misuse. A similar policy is implemented at the West Nusa Tenggara State Museum,

which signed a Memorandum of Understanding (MoU) with the Museum and Art Gallery of the Northern Territory, Australia, to enhance institutional capacity (News Flash, 2025). However, this policy remains compliance-based, or follows regulations without independent evaluation of the effectiveness of its implementation. Internal evaluations consist only of periodic monitoring and reminders, while external evaluations are rarely conducted and are administrative, not technical. This is expressed in the following quote:

Quote 6:

"If the evaluation involves reminders regarding the care of ancient manuscripts, please monitor it as a leader; it only involves periodic reminders." (Ida)

Quote 6 above contradicts Vinogradskaya's (2023) study in China, which implemented national and periodic evaluations through the Five-Year Plan. The approach at the Mpu Tantular State Museum remains administrative and individual, meaning the evaluation system serves only as a form of employee performance monitoring. Therefore, the museum is still in the early stages of building a comprehensive, performance-based evaluation culture.

Overall, the goals and policies at the Mpu Tantular State Museum have been implemented quite well, but the evaluation system has not yet met ideal standards. Therefore, the context evaluation at this museum can be categorized as quite good in terms of planning and policy, but needs strengthening in terms of assessment and ongoing program monitoring mechanisms.

Input Evaluation

Input evaluation aims to assess the museum's readiness for preservation. The results show that the preservation of ancient manuscripts at the Mpu Tantular State Museum is hampered by limited human resources, inadequate facilities, and inadequate budget, despite the availability of SOP guidelines and work mechanisms. This condition is clearly not sufficient to guarantee the success of ancient manuscript preservation. This is in line with Divayana's (2018) view that input evaluation aims to provide values and an overview of strategies, work plans, and budgets to achieve goals. The results of the input evaluation research obtained are described in several indicators, as follows:

Guidelines and Work Mechanisms

The preservation of ancient manuscripts at the Mpu Tantular State Museum adheres to the Standard Operating Procedures (SOPs) issued by the Tourism and Culture Office and Law Number 11 of 2010 concerning Cultural Heritage. As seen in excerpt 7 below:

Excerpt 7:

"Obviously, we have SOPs from the Tourism and Culture Office, so we just have to follow them, Ms. Ani, and adapt to the current situation. Everything is stipulated in Law Number 11 of 2010 concerning Cultural Heritage." (Ida)

Excerpt 7 above shows that every preservation action follows established procedures or standards to maintain the integrity and preservation of historical objects, as recommended in the Museum Standardization Guidelines (2020). However, implementation is flexible, adapting to field conditions, such as using cloves as a natural preservative and adjusting the temperature to 16°C, even though the standard is 20°C. This flexibility serves as an adaptation to ensure the physical stability of the manuscripts amidst limitations. The museum's work mechanism is

divided into two main functions: collection management and conservation. In line with the views of Hasibuan & Malayu (2019), a clear work mechanism supports the institution's effectiveness. However, its implementation still relies on one primary employee, the philology instructor who also serves as the technical implementer, assisted by the collection custodian. This dependency can be highly risky if there is staff turnover. This is explained in Quote 8:

Quote 8:

"If I can do it myself or ask the collection custodian for help, I usually clean fine dust or apply citronella oil. As a neutralizer, because we don't collaborate with other agencies."
(Ani)

Quote 8 emphasizes that the work mechanism is highly dependent on the availability of human resources. While collaboration with external parties is helpful, without adequate human resources and organized structure, effectiveness is difficult to optimize. Given these conditions, museums need to strengthen internal coordination and develop team-based work systems to ensure more structured and sustainable preservation practices.

Human Resources (HR)

The museum faces serious challenges related to limited human resources. The Museum Standardization Guidelines (2020) require a conservator with a minimum of 1-3 years of experience to meet standards. Currently, there is only one conservator and philologist, Ms. Ani, who handles the management of ancient manuscripts with 8 years of experience, and assistance from Mr. Sutarjo, the collection custodian with a secondary education. As seen in quotes 9 and 10:

Quote 9:

"If it's just me here, the most I get is the collection custodian." (Ani)

Quote 10:

"That's the problem, and there's no solution yet. There should be conservation graduates and science graduates for research, but they haven't been provided." (Ida)

The two quotes above indicate that the museum lacks adequate human resource qualifications, which inevitably impacts the ability to maintain and research manuscripts according to standards. This limitation is exacerbated by the lack of civil servant (CPNS) positions and the prohibition on recruiting contract workers. Furthermore, human resource training is conducted only 2-3 times a year and is inconsistent and unstructured. This situation contrasts with Turkey, which emphasizes the quality of human resources, experience, and formal training as key factors in successful restoration (Balci et al., 2022). This situation suggests that successful preservation in museums still relies more on practical experience than on mastery of modern conservation theory.

Facilities and Equipment

The condition of the facilities and equipment at the Mpu Tantular State Museum does not meet standards. The storage cabinets used are not equipped with an adequate security system, making them vulnerable to loss or theft. A proposal to procure a safe has been submitted, but has not been realized due to budget constraints. Furthermore, the air conditioning frequently breaks down and is focused more on employee comfort than on maintaining appropriate temperature and humidity for the manuscripts. As seen in quotes 11 and 12 below:

Quote 11:

"The infrastructure is inadequate; for example, the manuscript cabinet should have a safe with a code. I've conveyed this to the management, but it's expensive." (Ida)

Quote 12:

"The air conditioning is more for workers than for manuscripts. If the AC is broken or jammed, it's checked first. If it's minor, it's serviced, but if it's serious, we'll wait for the budget to be released." (Ani)

Quotes 11 and 12 indicate that facilities do not fully support the preservation of ancient manuscripts. The use of websites and social media is also still very minimal, resulting in inadequate information about the manuscript collection. This contrasts with the Spanish Archaeological Museum, which utilizes Twitter as a means of education and community empowerment (Rivero et al., 2020). Therefore, the facilities are relatively conventional and require improvement, particularly in terms of safety and environmental controls. The equipment used is still rudimentary, including brushes, cotton, citronella oil, chloroform, gloves, masks, hand sanitizer, and fumigation equipment. Candlenut oil, scanners, and Japanese tissues are not yet available. As explained in quotes 24 and 25:

Quote 24:

"For light conservation, brushes are used for daluang, citronella oil for lontar manuscripts, cotton, blue/black gloves, masks, and hand sanitizer." (Ani)

Quote 25:

"Fumigation equipment, chloroform for chemicals to eliminate small animals." (Su)

A study by Bacci et al. (2023) found that several museums in Italy have innovated by creating low-cost, high-quality scanners for digitizing manuscripts. This proved quite effective and a solution for museums with limited funding. Despite this, museums are still able to carry out basic routine maintenance activities, demonstrating adaptive efforts in managing limited resources. This limitation highlights the need for improved technical facilities to maximize preservation results.

Budget

The preservation budget, sourced from the Provincial Budget (APBD), is allocated for general preservation, not specifically for ancient manuscripts. The process of submitting needs and priorities is carried out whenever a budget is available, but the available funds are often insufficient to support optimal preservation. This situation prevents many development and research plans from being implemented. As explained in the following quote 13:

Quote 13:

"The budget from the Provincial Budget (APBD) is for general preservation. Every year, the main allocation is for purchasing chemicals for fumigation, oil, and equipment. I personally want to develop further, but my budget is limited, so I try to maximize it as much as possible." (Ida)

Quote 13 above shows a gap between ideal needs and the reality of available funding. This problem is also experienced by many other museums in Indonesia, according to the Indonesian House of Representatives' State Budget Bulletin (2019), where more funds are spent on routine activities than on preserving collections. A similar situation also occurred in Russia, as studied by Shabunova & Sokolova (2024), where museums are highly dependent on government funding due to a lack of sponsorship, donations, or private partnerships. The Mpu

Tantular Museum attempted to address this by maximizing its human resources, setting priorities, and seeking additional funding. However, these efforts were hampered by inadequate internal policies. Overall, the input evaluation indicates that the Mpu Tantular Museum has the basic resources to support preservation activities, although it has not yet reached the ideal conditions as outlined in the CIPP model. Efforts to increase human resource capacity and optimize external collaboration are strategic steps to address facility and budget limitations. Thus, the input aspect can be categorized as functionally adequate, but still requires strengthening in terms of professionalization of experts and long-term funding support.

Process Evaluation

The process evaluation assessed the implementation of ancient manuscript preservation through the work stages, methods used, and any challenges that arose. The results showed that the preservation process at the Mpu Tantular State Museum was structured and strengthened by collaboration with external institutions. However, limitations in human resources, equipment, budget, and inconsistent scheduling prevented the implementation from achieving maximum effectiveness. This finding aligns with Stufflebeam & Shinkfield (2007) who stated that process evaluation focuses on monitoring, documenting, and assessing program activities. The results of the process evaluation in this study are outlined in the following indicators.

Preservation Implementation and Strategy

The preservation of ancient manuscripts was carried out by adapting to the characteristics of the manuscripts. Daluang and paper manuscripts were cleaned using a soft brush in one direction, while ancient lontar manuscripts underwent an additional step of gently applying citronella oil with cotton wool, then airing for a day without direct sunlight. As explained in quote 14:

Quote 14:

"The daluang or paper is simply brushed gently in one direction. For lontar manuscripts, after brushing, apply citronella oil back and forth in one direction using dry cotton and dab it. Afterward, air dry, avoid direct sunlight, and then rearrange the manuscripts according to page numbering." (Ani)

Quote 14 aligns with Rachman's (2017) opinion, which emphasizes cleaning manuscripts using a soft brush in one direction under bright lighting. Damaged paper and daluang manuscripts are also fumigated annually using special equipment for five days with chloroform, followed by three days of aeration. Manuscript condition checks are routinely conducted every Monday, and can be more frequent during research activities. The museum's strategy combines curative and preventive approaches. Curative efforts are carried out through routine cleaning and maintenance, while preventive approaches are implemented through storage arrangements and environmental controls. Similar findings were found in Uche's (2024) study, where museums in Nigeria implement both preventive and curative conservation. Furthermore, the museum is also developing philology-based innovations, such as the study of the Tengger Primbon, which was successfully included in IKON 2024, thus gaining recognition that had previously received little attention. As stated by an informant in quote 16:

Quote 16:

"I introduced innovation because initially, philology wasn't a priority, but after the Tengger Primbon study was introduced to IKON, it opened many eyes. This strategy can be used for the future." (Ani)

The strategy in quote 16 shows that the museum is beginning to position ancient manuscripts as academic resources with cultural and educational value. This situation indicates a more dynamic direction for development, as it has begun to emphasize aspects of academic utilization and innovation.

Collaboration

Collaboration is one of the museum's main strengths in carrying out preservation activities. Collaboration with the National Library, the East Java Library, the Istiqlal Foundation, and UNAIR demonstrates the museum's openness to external support. The National Library plays a role in media transfer and coverization. The East Java Library contributes through media transfer and the creation of a portable library. The Istiqlal Foundation provides services for Quran interpretation. The collaboration with UNAIR includes cataloging, inventory, and staff training. This is stated in excerpt 15:

Excerpt 15:

"The National Library provides media transfer/digitization and coverization/portapel provision. The East Java Library can laminate/provide Japanese tissue and acid neutralizer. The Istiqlal Foundation usually obtains Quranic manuscripts from the Quranic Research Institute (LPMQ)." (Ani)

The collaboration mentioned in excerpt 15 aligns with the North Sumatra Provincial Museum, which involves a third party for fumigation and lamination (Jannah et al., 2024). However, compared to the NTB Museum, which has established international collaborations (News Flash, 2025), Mpu Tantular's collaboration remains domestic and has not yet led to global development. Nevertheless, this is a significant step, demonstrating a collaborative approach to addressing internal resource limitations.

Organization of Activities and Obstacles

The organization of preservation activities at the Mpu Tantular Museum demonstrates differences in work patterns between departments. The philology department does not have a fixed schedule; it is more flexible and adapts to the physical condition of the manuscripts, while the collection maintenance department implements a structured work system, focusing on one collection category each month. As quoted in quotes 17 and 18:

Quote 17:

"We can pick any day of the month because the target is one month, but there are several priority cases of manuscripts that need to be handled immediately, based on their condition or whether they want to be made into something like an exhibition." (Ani)

Quote 18:

"My department's schedule for January, for example, is ethnography, whatever I want to take, February is ceramics, and so on, but then it can end up being handled once a year." (Su)

Both quotes emphasize that Mrs. Ani is only able to complete 2-3 manuscripts per month, so she prioritizes them. Meanwhile, collection custodians must handle a larger number of collections, with a target of around 90 collections per month for permanent staff and 30 for contract workers. However, each category receives one shift per year. This situation results in reactive preservation, carried out when a manuscript is damaged or needed for an exhibition.

However, this also reflects the staff's flexibility and adaptability in adapting to field dynamics. The main obstacles faced are the lack of dedicated conservation personnel, the staff's educational backgrounds not matching technical requirements, and limited training. The museum also lacks a dedicated preservation laboratory and limited acid neutralization and lamination equipment. As seen in quotes 19 and 20:

Quote 19:

"There is a lack of human resources with expertise in conservation and the lack of a dedicated laboratory for preservation. Equipment is also a challenge." (Ani)

Quote 20:

"Funding limitations, which to this day have not found a solution and are taking longer to implement, for example, the procurement of adequate infrastructure that meets standards." (Ida)

The limitations in quotes 19 and 20 have resulted in delays in the procurement of standard infrastructure, such as safes with passwords and scanners for media transfer. The National Library (2023) states that the main obstacles to preservation in the regions are the lack of infrastructure, human resources, and budget. However, these limitations encourage museums to utilize existing resources through external collaboration or the use of natural materials. Ideally, museums need policy support and investment in facilities to ensure preservation activities continue to develop according to national standards.

Environmental Control and Risk

Environmental control in the Mpu Tantular Museum's storage space can be categorized as quite good. The room temperature is maintained at 20°C using two air conditioning units, as recommended by Guo et al. (2023) as a global conservation standard.

Quote 21:

"We provide two air conditioners with a temperature of 20 degrees, and the cleanliness must be extra careful." (Ida)

Quote 22:

"Every two days, the cabinets are opened to allow air circulation, then I shake the clothes to release the aroma. I use a soft toothbrush to brush the velvet carpet. I line the cabinets with carpet or thick cloth to prevent contact with metal." (Ani)

The two quotes above emphasize that the museum routinely cleans the velvet carpets using a soft toothbrush to prevent dust buildup, opens the storage cabinets every two days to maintain air circulation, and uses clothes in the storage cabinets to maintain aroma and prevent the growth of microorganisms. The manuscripts are arranged by type of material and then sorted alphabetically using a snaking pattern to facilitate physical identification. The manuscripts are also given registration labels that include basic information and collection codes. This is conveyed in quote 26 as follows:

Quote 26:

"If the arrangement in the cupboard starts from the bottom right to the left and continues upwards in the shape of a snake, the arrangement is based on material, then the script is based on the alphabet." (Ani)

Quote 26 above aligns with the arrangement of manuscripts at the South Korean Literature Museum through material classification, sequencing, and labeling with basic information (Bee & Lee, 2018). Other preventative measures include avoiding flammable objects, providing fire extinguishers, restricting access to cupboards, and placing manuscripts

in low-traffic areas. However, these efforts have not been matched by adequate disaster preparedness. The museum only has basic procedures in the form of fire simulations and relies on simple mitigation measures such as adjusting storage distances and positions, and controlling room temperature. As explained in quote 23:

"For paper and daluang manuscripts, I arrange the spacing to allow air to enter, and I lay the lontar manuscripts flat so they don't pile up. So far, we've only done fire simulations."
(Ani)

This situation differs from the Asian-African Conference Museum Library, which has implemented disaster preparedness through four stages: prevention, response, reaction, and recovery (Meilani et al., 2022). The absence of these procedures indicates the need for strengthened risk management by developing clearer and more structured emergency response protocols.

Overall, the preservation process at the Mpu Tantular State Museum has been carried out in an orderly manner and in accordance with basic preservation principles. However, compared to the ideal CIPP model, implementation is still limited to technical aspects and does not include environmental monitoring, disaster preparedness, and process quality evaluation. Therefore, the process evaluation is categorized as good but requires strengthening in risk management, documentation, and long-term strategic planning.

Product Evaluation

Product evaluation is a way to measure the success of the program. The product evaluation of ancient manuscript preservation activities at the Mpu Tantular State Museum showed positive results, particularly in maintaining the physical condition of the manuscripts and increasing preservation awareness among all groups. These results align with Marhaeni's opinion (in Divayana, 2018), which states that product evaluation aims to facilitate the decision-making process by focusing on the results achieved, the extent to which needs can be reduced, and the next steps. The results of the product evaluation research are outlined in several indicators, as follows:

Activity Output

The output of this activity is the physical condition of all manuscripts maintained in good condition. This reflects the success of the preservation program in maintaining the physical sustainability of the manuscript collection, although approximately 40-50% of the manuscripts require further preservation measures, such as lamination or the addition of new covers.

Quote 27:

"Thank God, all the manuscripts here are in good condition." (Ida)

Quote 28:

"Almost all of them have undergone light and moderate preservation, but this preservation is ongoing and ongoing, and advanced preservation, such as lamination or covers, only accounts for 40-50%." (Ani)

The two quotes above show that despite the relatively good physical results, not all manuscripts have received further care. Sulastri's (2021) study at the Balaputra Dewa Museum in Palembang showed a similar pattern: preservation progressed quite well physically, but was hampered by resource constraints. This suggests that the museum's problems lie in operational limitations. Thus, the success of preservation reflects the general pattern of regional museums

in Indonesia, which have succeeded in preserving their collections, but not yet optimally systematically.

Activity Outcomes

The outcomes of this activity have had an impact on research and education, for example, the success of several studies focused on manuscripts, winning gold medals in national academic competitions and scholarships abroad. This is emphasized in quote 29:

Quote 29:

"In terms of utilization, there is a lot of manuscript-based research, some of which has won gold medals from students, both nationally and internationally." (Ani)

Furthermore, the Primbon Tengger Manuscript won the IKON 2024 award and is now in the Memory of the World category. This preservation effort also encouraged collaboration with UNAIR for the Kodikologi program and UINSA for the Philology course. In line with Zakiyyah et al. (2022), the importance of academic and community involvement in supporting the preservation of ancient manuscripts is emphasized. However, the collection's utilization is not yet fully widespread because the digitization and publication of manuscripts are not optimal, and the benefits of preservation are felt more by academics than the general public, resulting in limited benefits.

Compliance with Standards

Preservation activities have been carried out in accordance with SOPs, for example, using cloves to repel moths, not wearing white gloves to prevent residue, and washing hands before touching manuscripts if gloves are not available.

Quote 30:

"We certainly try our best to follow the SOP, but there are always human resource and funding constraints. If there are revisions to the SOP from the central government, we also try to adjust." (Ida)

Quote 30 demonstrates the museum's commitment to remaining adaptive to applicable regulations. However, when compared to conservation practices in Europe, which have implemented modern conservation systems with automated temperature and humidity controls (Lucchi, 2018), the museum's system remains manual and traditional, yet this represents a realistic adaptation to limited resource conditions. In other words, preservation complies with applicable standards, but its implementation is still subject to field capabilities.

Sustainability of Activities

According to Pop et al. (2019), the sustainability of cultural preservation depends heavily on openness to collaboration and public participation. This view aligns with the sustainable preservation of ancient manuscripts at the Mpu Tantular State Museum, which also ensures that their historical value and knowledge remain accessible to future generations. One of the museum's top priorities is improving the quality of its human resources to keep pace with developments in preservation technology, including competency in maintenance, digitization, and adaptation of conservation methods. As quoted in quotes 31 and 32, the following:

Quote 31:

"The plan is to conduct training to improve human resources because it needs to be synchronized with research development. We need to conduct comparative studies and improve internal and external handling." (Ida)

Quote 32:

"I already have data from the end of the year, such as data on several manuscripts that will be collaborated with the East Java Library or the National Library for media transfer, completing the 200 or so that have not yet been digitized." (Ani)

The museum is also expanding its collaboration with the East Java Library and the National Library to facilitate more effective preservation. Participation in IKON 2024 reflects the museum's commitment to continuous learning and adapting to new developments. Thus, the direction taken by Mpu Tantular is correct, although it still requires more adequate budgetary support and human resources to ensure optimal sustainability.

Therefore, it can be concluded that the product evaluation of the ancient manuscript preservation activities at the Mpu Tantular State Museum has been physically successful and has had a positive impact on academic activities. However, when compared to ideal standards, further strengthening of digitalization, indicator-based evaluation, and long-term sustainability strategies is needed to ensure the benefits of preservation are felt more widely and sustainably.

CONCLUSION

The preservation of ancient manuscripts at the Mpu Tantular State Museum has been progressing quite well and demonstrates a commitment to preserving cultural heritage. Based on the CIPP model evaluation, the context aspect indicates that the museum has relevant objectives and policy support, although the program evaluation system still needs to be strengthened. In terms of input, the museum faces limited human resources, an unallocated budget, and inadequate facilities. In terms of process, preservation has been carried out through traditional methods and external collaboration, but its implementation has not been fully systematic and has not been proactive in responding to disaster risks. Meanwhile, the product aspect shows achievements in the form of saving several manuscripts, but the impact has not been evenly distributed, and the use of manuscripts as a medium for cultural education remains limited. This study not only describes the empirical conditions of preservation at the Mpu Tantular State Museum but also expands the use of the CIPP model in the preservation of ancient manuscripts. These findings confirm that CIPP functions not only as an evaluation tool but also as an analytical framework for assessing the effectiveness, relevance, and sustainability of preservation programs at the regional museum level.

SUGGESTION

Based on the research results above, there are several suggestions such as; (1) increasing human resource capacity through student internship programs facilitated by the Department of Culture in collaboration with universities; (2) optimizing social media and the museum's official website through public communication policies so that information is more open and can attract public participation; (3) building cooperation between museums and cultural institutions, such as the National Library, manuscript activist communities, and the private sector to support digitization and preservation funding; (4) encouraging local governments to establish policy support and special budget allocations for the preservation of

ancient manuscripts so that the program runs more planned. In this way, the preservation of ancient manuscripts does not only stop at protection, but also expands public access to the knowledge they contain.

THANK YOU-NOTE

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