Developing collaborative strategies to address challenges and leverage opportunities in traditional arts digital preservation

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Abstract

Background: The rapid advancement of digital technologies has transformed how cultural heritage is preserved, accessed, and disseminated. While digitalization offers new opportunities to revitalize traditional arts and engage younger generations, it raises concerns related to cultural authenticity, technical capacity, and ethical governance.

Purpose: This study examines (1) how digital technologies contribute to the preservation and revitalization of traditional arts, (2) the key challenges faced by artists and cultural practitioners in adapting to digital environments, and (3) the collaborative strategies required to ensure culturally grounded and sustainable digitalization.

Methods: A qualitative approach was employed using semi-structured interviews with five informants, including traditional artists, academics, and cultural practitioners involved in heritage-related activities in Indonesia. Data were analyzed thematically to identify recurring patterns related to digital preservation practices, challenges, and forms of collaboration.

Results: Findings show that digitalization strengthens preservation by expanding accessibility, protecting fragile archives, and creating immersive experiences through technologies such as virtual reality and digital platforms. However, informants highlight significant constraints, including digital literacy gaps, inadequate infrastructure, financial barriers, and intellectual property risks. They emphasize that authentic cultural values must remain central in digital transformation. Effective digitalization requires multi-stakeholder collaboration—linking artists, communities, academics, government, and technology actors to ensure accuracy, cultural integrity, and sustainable implementation.

Conclusions: Digital technologies hold meaningful potential for revitalizing traditional arts when applied ethically and collaboratively. Sustainable digital preservation requires culturally sensitive approaches, institutional support, and coordinated multi-stakeholder engagement. Future research should involve broader participant groups and comparative cultural contexts to deepen understanding of long-term digital preservation strategies.

Keywords:
Art
Culture
Digitalization
Preservation
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INTRODUCTION

The rapid development of digital technologies over the past two decades has significantly transformed various dimensions of human life, including art and culture. Technology has reshaped how people create, consume, interpret, and circulate artistic expressions. Simultaneously, art and culture have served as critical public forums for reflecting on how technological forces reshape social life (Kagaba, 2025). Digital transformation, characterized by high-speed internet, social media ecosystems, artificial intelligence (AI), virtual and augmented reality (VR/AR), and multimedia platforms, has opened new opportunities while introducing complex challenges for preserving and developing Indonesia's traditional arts. VR and AR technologies are evolving rapidly and increasingly influence artistic production and cultural mediation (Gervasi et al., 2022). In this era of technological disruption, art and culture are no longer tied solely to physical performance spaces; they are embedded within an expansive, dynamic, and highly competitive digital ecosystem.

Indonesia, as one of the world's most culturally diverse nations, faces an urgent need to ensure that its traditional arts and culture remain relevant and transmissible to future generations (Khadijah et al., 2024). Indonesian cultural heritage has left an enduring imprint globally through its art, music, dance, and ritual practices, as well as through deeply rooted communal values and a longstanding commitment to safeguarding cultural identity (Siringo-ringo et al., 2022). Yet many traditional art forms—such as wayang, regional dances, indigenous music, craftsmanship, and ritual performances—exist in increasingly vulnerable conditions due to limited generational regeneration, declining youth interest, and inadequate documentation or archival infrastructures. Many traditional artists struggle to find suitable successors, placing various forms of traditional art at risk of disappearance (Tan et al., 2018). The lack of interest among younger generations in participating in cultural preservation contributes to the decline of culture and tradition. Unfortunately, the younger generation has not fully embraced the responsibility of cultural transmission, influenced by multiple internal and external factors: internally, shifting value orientations have led some communities to view ancestral traditions as less relevant to contemporary life; externally, the accelerating forces of globalization have introduced new cultural preferences, lifestyle changes, and homogenizing influences that further diminish the appeal of traditional cultural practices (Agatha et al., 2022). These intersecting challenges underscore the fragility of Indonesia's cultural heritage and the pressing need for deliberate, innovative, and sustainable preservation strategies. Digitalization is therefore considered a crucial strategy for addressing these issues.

In an era marked by rapid technological advancement and increasing global interconnectedness, the preservation of cultural heritage has become critically important (Siliutina et al., 2024). Digitalization offers a highly effective, low-cost, and environmentally sustainable preservation method (Putri et al., 2020),

enabling artworks to be reproduced and disseminated in diverse formats and sizes while maintaining high resolution (Dhaenens & Truyen, 2024). By digitizing artistic works and cultural practices, preservation efforts become more inclusive, widely accessible, and capable of reaching global audiences. However, this expansion of access requires a robust framework for long-term sustainability. International organizations such as UNESCO have emphasized that sustainable digital preservation must adhere to standardized archival systems to protect digitized cultural assets from technological obsolescence and data degradation—universal threats to digital longevity regardless of cultural context (Schorlemer, 2020). Indonesia's vast cultural wealth constitutes an invaluable national resource that must be safeguarded through robust intellectual property and preservation frameworks (Hariri, 2021).

In the current era of digital disruption, globalization and technological progress operate as interconnected, multidimensional phenomena that fundamentally reshape how cultural heritage is perceived and maintained (Sari et al., 2024). Digitalization, in this context, must be understood as more than a technical conversion of physical artifacts into binary formats; it is a profound socio-cultural process of revitalization where the intrinsic values, meanings, and social functions of traditional arts are reanimated through contemporary media. To navigate this shift, preservation strategies must move away from static, conservative approaches in favor of adaptive and innovative methods that remain responsive to the rapidly

evolving sociocultural dynamics of a globalized world (Hidayat et al., 2025).

This adaptive approach is grounded in a synergy between cultural heritage theory and the digital divide framework, which together illuminate the complexities of modern preservation. While cultural heritage theory posits that tradition is a dynamic process of identity construction requiring active transmission, the digital divide framework warns of the systemic inequalities—such as literacy gaps and infrastructure deficits—that can hinder this transmission (Smith, 2006). By integrating these perspectives, it becomes clear that digitalization serves as a double-edged sword; its success as a tool for cultural continuity depends entirely on the equitable and ethical implementation of technology, ensuring that digital tools empower community agency rather than exacerbating existing socioeconomic disparities (van Dijk, 2020).

Revitalizing culture is therefore crucial for sustaining cultural identity amid the intensifying pressures of globalization (Aziz, 2025). Emerging technologies, including digital reconstruction, interactive educational platforms, virtual exhibitions, and AI-assisted documentation and analysis, offer transformative possibilities for expanding public engagement with traditional arts. Digitalization has both enriched and complicated the experience of viewing and interpreting art, granting contemporary audiences unprecedented access to global artistic expressions, including those from places they may never physically visit (Tvrdišić, 2022). Yet despite these advancements, significant challenges remain. Many cultural institutions

continue to face insufficient funding, limited technological expertise, inadequate institutional support, and uncertainty regarding how to establish sustainable digital-preservation programs (Masenya & Ngulube, 2020). These limitations raise critical concerns surrounding authenticity, commodification, cultural displacement, and the potential loss of contextual meaning when traditional arts are mediated, transformed, or relocated into digital environments.

Efforts to revitalize traditional arts through digitalization require meaningful collaboration among artists, academics, policymakers, cultural institutions, and local communities (Awaliyah et al., 2025). Much valuable cultural knowledge has already been lost due to the disappearance of experts and the deterioration of administrative structures (Pramartha et al., 2017). Digital platforms can, however, facilitate collaborative preservation networks that connect indigenous communities, linguists, educators, and cultural activists worldwide, strengthening collective efforts to safeguard traditional knowledge (Ori & Susianti, 2023). Many digitization and preservation projects are underway worldwide by archivists, project managers, curators, librarians, and digitization enthusiasts; however, it is challenging for project managers and professionals to keep pace with technological changes and other challenges (Pandey & Kumar, 2020). Although the Indonesian government has initiated several digital-heritage programs, their implementation remains uneven; many cultural communities continue to face technological, infrastructural, and financial limitations. Furthermore, digital

preservation poses security risks, as digital collections are vulnerable to cyberattacks, unauthorized access, and data breaches (Ilabakho & Rasmita, 2025). Artistic communities also hold diverse perspectives regarding digitalization; some embrace it as a catalyst for creativity and visibility, while others regard it as a potential threat to cultural purity and authenticity.

Given the growing influence of digital technologies on cultural practices, this study seeks to explore the intersection of traditional arts and digitalization in Indonesia. Specifically, it aims to address three key questions: (1) How do digital technologies contribute to the preservation and revitalization of traditional arts? (2) What are the major challenges faced by artists and cultural practitioners in adapting traditional arts to digital environments? and (3) What collaborative strategies are required to ensure that digitalization efforts are culturally grounded and sustainable?

This study contributes to the field of digital cultural heritage by examining how communities in the Global South navigate the complexities of globalization through technological adaptation. It offers empirical insights into the lived experiences of Indonesian cultural practitioners, highlighting the importance of balancing narrative integrity with media innovation—a challenge shared by heritage communities worldwide. By foregrounding the voices of artists, government representatives, and digital practitioners, this research provides a grounded, multi-stakeholder perspective that can inform both scholarship and policy in the domain of sustainable cultural preservation.

RESEARCH METHODS

This study employs a qualitative descriptive research design, appropriate for investigating contemporary cultural phenomena within their natural contexts. Qualitative descriptive approaches produce rich, pragmatic accounts of informants' experiences and perspectives without imposing heavy theoretical abstraction (Lim, 2025). Such approaches typically adopt a naturalistic stance and examine social phenomena "as they are" (Kim et al., 2017). The objective is to capture how actors involved in cultural practice understand and enact digitalization as a strategy for preserving and revitalizing Indonesian culture.

Informants were selected through purposive (criterion-based) sampling due to their direct involvement and expertise in digital cultural initiatives. The study includes five informants, each representing a distinct stakeholder perspective necessary for triangulated insights: two informants as community-based artists—practitioners actively engaged in transmitting and performing traditional arts at the grassroots level; one informant as a cultural officer (government representative)—an official involved in cultural policy, programming, or digital heritage initiatives; and two informants as digital culture practitioners—professionals working in technology-enabled cultural documentation, archiving, or dissemination.

Selection criteria prioritized individuals with demonstrated experience in both traditional arts and digital initiatives, ensuring that participants could provide informed, contextually grounded perspectives on digital preservation practices. Specifically, artists were required to have at least five years of active practice in traditional arts and involvement in at least one digital documentation or dissemination project. The government representative was selected based on direct responsibility for cultural heritage programs at the regional or national level. Digital practitioners were required to have professional experience in cultural digitization projects, including technical implementation and community engagement. Although the sample size is small, it was intentionally limited to allow for in-depth, nuanced exploration of informants' lived experiences and expert insights. This sample size is justified by the study's exploratory aims and the depth-oriented nature of qualitative descriptive research, which values rich, detailed data over large-scale generalizability. By including multiple stakeholder groups, the study captures diverse perspectives and facilitates triangulation, strengthening the credibility and comprehensiveness of the findings. Data saturation was considered throughout the data collection process; while complete thematic saturation was not fully achieved due to the limited sample, key themes emerged consistently across informants, suggesting adequate informational depth for the study's exploratory purposes.

Data were collected through semi-structured interviews designed to capture participants' perspectives on the digital preservation and revitalization of traditional arts. An interview guide was developed around core themes, including perceptions of digitalization, motivations for digital preservation, adaptation strategies,

institutional support, technical, financial, and ethical challenges, and visions for revitalization. Questions were open-ended to encourage rich and reflective narratives (Fadila et al., 2025), and probing questions were used to elicit concrete examples, emotions, and contextual detail (Elhami & Khoshnevisan, 2022). The interview guide was pilot-tested with one cultural practitioner to assess clarity and timing, and minor revisions were made based on the feedback received.

Interviews were conducted individually, either face-to-face or via secure video-conferencing platforms, depending on informant preference and logistics. Each interview lasted between 30 and 60 minutes. With informed consent, interviews were audio-recorded and later transcribed verbatim. Interviews were conducted and transcribed verbatim in Indonesian. Data analysis, including coding and theme development, was carried out in the original language to preserve contextual and cultural meanings. Translation into English was performed at the reporting stage for analytical summaries and illustrative quotations. The translation followed a meaning-based approach, prioritizing conceptual equivalence and cultural nuance rather than literal, word-for-word rendering. Translation choices were documented in an audit trail to enhance transparency and trustworthiness.

Data analysis followed the interactive model proposed by Miles and Huberman (1984), which involves three interrelated and iterative stages. First, data reduction was conducted by selecting, coding, and organizing meaningful segments of the interview transcripts related to

digitalization practices, preservation strategies, challenges, and revitalization efforts. Initial open coding identified 47 preliminary codes, which were then grouped into focused codes through constant comparison. Second, data display involved organizing the reduced data into thematic matrices and narrative summaries to facilitate pattern recognition and comparison across informants. Matrices were constructed to compare perspectives across stakeholder groups (artists, government, digital practitioners) on key issues such as authenticity, collaboration, and challenges. Third, conclusion drawing and verification entailed interpreting emerging themes, examining their consistency across participants, and continuously validating interpretations against the data. This iterative analytical process supported reflexive engagement with the data and enhanced analytic rigor throughout the study.

Researcher positionality was explicitly considered throughout the research process. The researcher has an academic background in education and cultural studies, which informed sensitivity to issues of cultural meaning and preservation. At the same time, reflexive practices were employed to minimize potential bias, including maintaining analytic memos, documenting decision-making processes, and grounding interpretations in participants' narratives rather than personal assumptions.

This study adheres to basic ethical principles of qualitative research. Informants were informed about the purpose of the study, their rights, and the voluntary nature of participation. Informed consent was obtained prior to

Table 1. Informants' data

No	Initial Name	Profession	Code in Article
1	M.A.S	Local Artist	Informant 1
2	J.P.M	Local Artist	Informant 2
3	M.M.H	Government Officer	Informant 3
4	T.F.P	Digital-culture Practicioner	Informant 4
5	M.F.A	Digital-culture Practicioner	Informant 5

Source: Research data, 2025

data collection. Informants' identities (Table 1) are anonymized, and all data are stored securely to ensure confidentiality and privacy.

RESULTS AND DISCUSSION

This chapter presents the key findings of the study and discusses their implications in relation to existing literature on digitalization, cultural preservation, and the revitalization of traditional arts in Indonesia. Based on the analysis of semi-structured interviews with five informants representing artistic, institutional, and technological perspectives, three major themes emerged: (1) Perceptions of Digitalization in the Context of Cultural Revitalization, (2) Challenges in Digital Preservation and Adaptation, and (3) Collaboration and Strategic Efforts for Sustainable Digital Cultural Practices. These themes reflect how stakeholders interpret the role of digital technology in safeguarding cultural heritage (Ananda et al., 2024), the barriers they face in transitioning to digital ecosystems, and the collaborative strategies required to ensure the continuity and authenticity of traditional arts in an increasingly digital world.

Informants interpret the role of digitalization within the broader context of preserving and revitalizing traditional arts in multiple ways. Their foundational understanding of concepts such as digitalization, revitalization, and cultural values provides an important lens for understanding how technology is perceived as both an opportunity and a challenge for sustaining cultural heritage. These initial perceptions shape how artists, government actors, and digital practitioners view the urgency of digital efforts, consider potential impacts on authenticity, and envision digital platforms as a bridge for transferring cultural knowledge across generations.

> "For me, revitalizing art in the digital era means bringing traditional arts back to life by using available digital media, with the aim of increasing public knowledge, awareness, and appreciation of the arts." (Informant 1. Interviewed, May 5, 2024).
>
> "Digitalization is a crucial instrument for archive preservation and global accessibility. It ensures that artistic documentation is not vulnerable to physical deterioration and facilitates the transfer of knowledge to Generation Z and Alpha." (Informant 2. Interviewed, May 5, 2024).

The preservation of art and culture through multimedia technologies has become a central strategy for sustaining cultural heritage in the digital era (Wani et

al., 2019). Informants' perspectives reflect this shift, illustrating how digitalization is increasingly viewed as both a cultural safeguard and a means of reintroducing traditional arts to contemporary audiences. Informant 1 describes digital revitalization as an effort to "bring traditional arts back to life" through digital media, emphasizing its ability to broaden public knowledge, awareness, and appreciation—an approach that aligns with the growing need for cultural innovation in the face of globalizing pressures (Hariri, 2021).

Informant 2 further highlights digitalization as essential for long-term preservation, offering durable documentation, protection from physical deterioration, and expanded accessibility for global and younger audiences such as Gen Z and Alpha. As emphasized in prior research, such efforts ensure that cultural heritage is not only protected but also meaningfully transmitted across generations (Ori & Susianti, 2023), requiring adaptive and forward-looking strategies rather than purely conservative ones (Hidayat et al., 2025).

What emerges as particularly significant is the dual function of digitalization articulated by these artists: it operates simultaneously as a preservation mechanism and a revitalization tool. This finding challenges the binary framing often present in heritage discourse, where preservation is positioned as backward-looking and innovation as forward-facing. Instead, informants conceptualize digitalization as a bridge that allows traditional arts to remain culturally rooted while becoming temporally and spatially accessible to new audiences. Collectively,

these insights show that digitalization operates as more than a technical process; it functions as a transformative cultural mechanism that preserves authenticity, enhances reach, and strengthens the relevance of traditional arts within a digitally interconnected society.

Informants' perspectives reveal a central tension in the digital revitalization of traditional arts: how to embrace innovation without compromising cultural authenticity. Informant 3 emphasized that:

> "Digitalization may change the form of presentation, but it does not have to alter the philosophical meaning. Authenticity remains intact as long as the transfer into digital formats is carried out with high integrity toward the original principles." (Informant 3. Interviewed, 6 May, 2024)

In contrast, digital cultural practitioners focused on the practical integration of technology into artistic practice. Informant 4 stated,

> "The balance between technology and cultural authenticity can be achieved when technology is used as a supporting tool, not the main focus. Innovation should be used to strengthen cultural authenticity, not diminish it." (Informant 4. Interviewed, May 6, 2024).
> "Make technology a tool, not a goal. Technological innovation should serve and reinforce the values of traditional arts, not replace them." (Informant 5. Interviewed, May 6, 2024).

In recent decades, digital technologies and the Internet have profoundly reshaped how cultural heritage is produced, accessed, and disseminated (Schorlemer, 2020). Sustainable digital preservation seeks to maintain the long-term continuity of digital resources while operating within

practical constraints (Masenya & Ngulube, 2020). Informants' perspectives reveal a central tension in the digital revitalization of traditional arts: how to embrace innovation without compromising cultural authenticity.

From the perspective of a cultural government representative, Informant 3 emphasizes that digitalization may alter the form of artistic presentation but does not inherently affect philosophical meaning, provided that the conversion process upholds traditional principles. This institutional perspective prioritizes conceptual fidelity and policy-level safeguards to ensure that digital transformations do not erode the cultural essence of traditional arts.

In contrast, digital cultural practitioners (Informants 4 and 5) focus on the practical integration of technology into artistic practice, highlighting that technology should serve as a supportive tool rather than the primary focus, ensuring that innovation reinforces, rather than diminishes, cultural roots. While the government perspective centers on safeguarding authenticity at a conceptual and policy level, practitioners emphasize the operational balance between innovation and cultural fidelity in day-to-day digital applications.

This comparative insight is critical: it reveals that different stakeholders conceptualize authenticity through different lenses—institutional versus operational, policy versus practice. Together, these perspectives suggest that digital technologies can enrich traditional arts, but only when applied thoughtfully, ethically, and with a clear commitment to preserving cultural values rather than pursuing innovation for its own sake. This comparative insight

underscores the complementary roles of institutional oversight and practitioner-led technological adaptation in sustainable digital preservation.

The informants' reflections highlight the dual character of digitalization in the context of traditional arts, revealing its potential both to support cultural preservation and to expose heritage to commodification. Informant 1 noted,

> "Digitalization can serve as a form of art preservation when it is carried out with the intention to safeguard and promote the arts, but it can also become a form of commodification if it is driven solely by commercial purposes." (Informant 1. Interviewed, May 5, 2024).

In contrast, Informant 3 framed digitalization as a "cultural translator," stating,

> "Digitalization acts as a cultural translator. It enables traditional values to be repackaged using visual languages and formats familiar to younger generations, making the transmission of those values easier." (Informant 3. Interviewed, May 6, 2024)

Digital preservation enhances access to cultural resources and ensures their availability in an increasingly globalized era (Gunanto, 2020). From the perspective of a community-based artist (Informant 1), digitalization functions as an authentic preservation tool when intentionally directed toward safeguarding and promoting traditional art forms; however, it carries the risk of commodification when commercial interests take precedence over cultural intentions. In contrast, a government officer (Informant 3) frames digitalization as a "cultural translator," emphasizing its role in repackaging

traditional values using visual languages and formats familiar to younger audiences, thereby facilitating intergenerational transmission. While the artist foregrounds the intent and ethical orientation of digital initiatives, the government perspective highlights strategic mediation and audience adaptation as key mechanisms for cultural continuity.

This divergence in framing is revealing: artists express concern about the ethical risks of digital commodification, reflecting their direct stake in maintaining cultural integrity, while government actors emphasize the functional benefits of digital mediation for public engagement. An unexpected finding here is the artist's awareness of commodification risk— suggesting that grassroots practitioners are not passive recipients of digital tools but critical evaluators of their cultural implications. Together, these insights suggest that the cultural impact of digitalization is contingent upon both purpose and implementation: when applied responsibly, it reinforces heritage preservation and intergenerational engagement, but if driven primarily by economic motives, it risks reducing rich cultural traditions to marketable content.

Informants highlight multiple challenges faced by artists and cultural practitioners as they navigate the rapidly evolving digital landscape, including limited digital literacy, uneven access to technology, and concerns over the potential misinterpretation or misuse of digital artworks. Simultaneously, they acknowledge that emerging technologies such as AI, VR/AR, and interactive media offer powerful opportunities to introduce

traditional arts to younger generations in more engaging and immersive ways. Understanding these dual dynamics provides a critical foundation for examining how digital preservation can be strengthened within Indonesia's cultural ecosystem. Informant 1 stated,

> "The biggest challenge is the lack of knowledge about how to use digital media and the risk of shifts in meaning when artworks circulate among broad digital audiences." (Informant 1. Interviewed, May 5, 2024)
> "In my view, there are two key issues: the digital literacy gap among senior artists and the limitations in infrastructure and funding needed to acquire proper hardware and software." (Informant 2. Interviewed, May 5, 2024).
> "The biggest challenge is adaptation. Many artists are not yet familiar with digital technologies, internet access is still uneven, and some worry that their work may be misused." (Informant 4. Interviewed, May 6, 2024)

Informants collectively emphasize that the major challenges in digital preservation stem from both human and structural limitations. Reliance on digital systems carries inherent vulnerabilities, as technical failures, software obsolescence, and data corruption can result in the loss of valuable cultural information (Ilabakho & Rasmita, 2025). From a human-resources perspective, Informant 1 highlights limited digital literacy and the risk that artistic meanings may shift when works circulate among broad and diverse online audiences.

Informant 2 expands on this by noting the digital literacy divide between generations, particularly among senior artists, alongside inadequate infrastructure and insufficient funding for essential equipment. Financial barriers such as

costly technology, storage systems, and software licenses further complicate preservation efforts (Asare et al., 2023). Similarly, Informant 4 points to challenges of adaptation, citing unfamiliarity with digital tools, uneven internet access, and persistent concerns over copyright violations or misuse of digitalized artworks. In parallel, the continual need to update storage systems and preservation methods in response to rapid technological change remains a substantial technical challenge (Erturk, 2020).

These issues are not unique to the Indonesian landscape; they mirror global trends where institutional support and financial sustainability are often the weakest links in digital preservation projects. International discourse on UNESCO's digital heritage guidelines emphasizes that the digital divide remains a primary barrier to equitable cultural representation worldwide (Schorlemer, 2020). Thus, the struggle of Indonesian artists to maintain digital purity while seeking visibility is part of a broader global tension between cultural authenticity and the commodifying forces of the digital economy. These insights demonstrate that successful digital preservation requires more than technological availability; it demands ongoing capacity-building, equitable infrastructure, financial support, and comprehensive safeguards to ensure cultural integrity is maintained (Zakiyyah et al., 2022).

Despite these challenges, informants highlight advanced technologies as powerful tools for presenting traditional arts in more engaging and accessible ways, particularly for younger audiences. Informant 5 noted,

"Technology helps introduce traditional arts to the public in a more interactive and engaging way." (Informant 5. Interviewed, May 7, 2024)
"Such technologies function as immersive and interactive media that can capture the attention of younger generations. VR/AR enables direct experiences that remove geographical barriers, making traditional arts feel personal and modern." (Informant 3 . Interviewed, May 6, 2024)

From the perspective of a digital culture practitioner (Informant 5), digital media facilitates interactive and captivating formats that enhance audience participation and interest. Complementing this view, a government representative (Informant 3) emphasizes the immersive and boundary-transcending potential of technologies such as virtual and augmented reality, which allow users to experience cultural practices firsthand regardless of geographic limitations. Virtual reality, for instance, employs computer-generated environments and motion-control systems to create a sense of presence in three-dimensional, interactive spaces (Bekele et al., 2018). Similarly, virtual museums, 3D reconstructions of archaeological sites, and AR cultural experiences have demonstrated the capacity to transport audiences to distant civilizations and historical moments, fostering deeper engagement with heritage (Zhong et al., 2021). There is similarity between Informant 5 and Informant 3: the practitioner foregrounds audience engagement and interactivity, while the government perspective emphasizes technological mediation and accessibility at a societal level. These insights illustrate that emerging technologies can modernize

the presentation of traditional arts while preserving cultural authenticity, creating experiences that feel both personal and meaningful for contemporary audiences. (Hassan et al., 2025).

Informants emphasize that transforming traditional arts into digital formats requires more than technical conversion; it necessitates the preservation of the cultural narratives and meanings embedded within the art. Informant 1 highlighted the role of digital storytelling, stating,

> "The transformation does not stop at format conversion; it involves strong narratives, historical context, and philosophical values to build emotional connection with digital audiences." (Informant 1. Interviewed, May 5, 2024).

In contrast, Informant 2 drew attention to the importance of media adaptation, noting,

> "The most effective way is to create works that retain their cultural stories but are packaged in appealing formats, such as short videos or interactive media." (Informant 2. Interviewed, May 5, 2024)

Informants emphasize that transforming traditional arts into digital formats requires more than technical conversion; it necessitates the preservation of the cultural narratives and meanings embedded within the art. Informant 1 highlights the role of digital storytelling, in which historical context and philosophical values are deliberately integrated to foster emotional engagement with audiences. This perspective reflects the potential of digital platforms to function as spaces for sustaining oral traditions and other

forms of intangible cultural heritage (Ori & Susianti, 2023).

In contrast, Informant 2 draws attention to the importance of media adaptation, emphasizing that culturally rooted stories can be effectively communicated through contemporary formats such as short videos or interactive media. The use of short-video platforms for preserving cultural heritage has become a growing focus of interest. From the perspective of media convergence theory, digital platforms dissolve conventional communication boundaries, facilitating multi-layered interactions between content and audiences, and fostering significant transformations in communication practices (Cao, 2025).

Interactive digital storytelling has increasingly become a preferred approach for presenting and communicating digital preservation, allowing traditional narratives and cultural knowledge to be conveyed in engaging and immersive ways (Rizvic et al., 2019). Taken together, these perspectives indicate that effective digital preservation strategies rely on a careful balance between narrative integrity and media innovation, ensuring that cultural meaning is maintained while remaining accessible and appealing to contemporary audiences.

Informants emphasize the crucial role of government and cultural institutions in providing policies, training, and supportive infrastructure that ensure digital initiatives remain grounded in traditional values. At the community level, artists, academics, and local groups contribute distinct forms of expertise, ranging from cultural knowledge to methodological guidance and grassroots engagement, making the

digitalization process more accurate and inclusive. The discussion also highlights the importance of designing effective strategies, including culturally informed digital storytelling and creative media formats, to transform conventional art into compelling digital experiences without diminishing its authenticity. Together, these insights underscore that sustainable digital preservation requires coordinated action across institutions, communities, and technological partners.

Informant 3 characterized the government's responsibilities as threefold, stating,

> "The government must act as a regulator, facilitator, and initiator. This includes providing regular training programs on digitalizing the arts and ensuring Intellectual Property (Copyright) protection for digital works." (Informant 3. Interviewed, May 6, 2024).

Complementing this institutional view, Informant 5 highlighted,

> "The government and institutions can play an active role by providing adequate training and facilities, as well as developing policies for the preservation and promotion of traditional arts." (Informant 5. Interviewed, May 7, 2024).

Informants underscore the pivotal role of government and cultural institutions in ensuring that digitalization efforts remain sustainable and culturally grounded. Informant 3 characterizes the government's responsibilities as threefold (regulator, facilitator, and initiator), including providing regular training programs on digital art practices and safeguarding intellectual property rights. This perspective

aligns with literature emphasizing the legal and ethical dimensions of digital preservation, such as identifying original rights holders and ensuring fair recognition and compensation for creators (Trencheva & Zdravkova, 2019).

Complementing this institutional view, Informant 5 highlights the practical importance of accessible facilities, adequate resources, and supportive policies to enable artists and communities to adopt digital tools effectively. Both informants point to ongoing challenges that require institutional oversight, including digital piracy and information security concerns in open-access digital collections (Harisanty et al., 2021).

These insights suggest that effective digital revitalization relies on coordinated institutional collaboration, which both empowers practitioners and protects cultural integrity, ensuring that digital initiatives support, rather than compromise, the values embedded in traditional arts.

Informants consistently emphasize that effective digital revitalization of traditional arts requires collaborative and inclusive partnerships across multiple stakeholders. Informant 2 described this collaboration through a "mini pentahelix" model, stating,

> "It must be collaborative and inclusive (Mini Pentahelix Model). Local communities/Artists are the knowledge holders, Academics provide the methodology, and Community groups are the on-the-ground implementers." (Informant 2. Interviewed, May 5, 2024)

Informant 4 reinforced these complementary roles, noting,

> "Artists: those who create and fill the content. Academics/Universities: those

who teach the technical aspects and help ensure the accuracy of the cultural narrative. Local communities: the first audiences who provide feedback and support." (Informant 4. Interviewed, May 7, 2024).

"Ideal collaboration must be a three-part synergy that complements one another: Artists provide authentic works and cultural understanding. The government provides funding, training, internet infrastructure, and reliable platforms. Technology/Startups provide the tools (VR/AR, AI), digital marketing strategies, and social media platforms to distribute the works to wider audiences." (Informant 5. Interviewed, May 7, 2024).

Digital technologies can support heritage preservation by increasing public engagement, but the cultural values embedded in digital content must be carefully curated to foster genuine awareness (Revianur, 2020). Informant 2 describes this collaboration through a "mini pentahelix" model in which artists and local communities serve as primary knowledge holders, academics provide methodological and technical guidance, and communities implement preservation efforts on the ground. The collaborative pattern identified in this study resonates with the principles of the pentahelix model, which emphasizes inclusive engagement among multiple societal actors to enhance
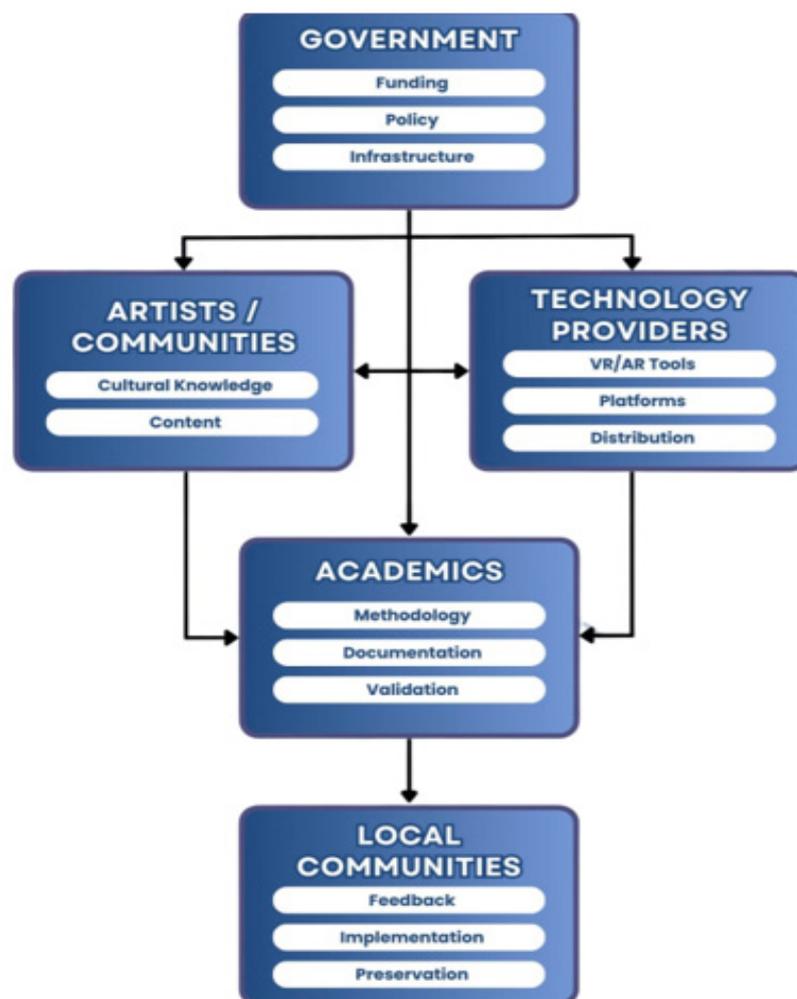

Figure 1. Multi-stakeholder collaboration framework for sustainable digital preservation of traditional arts

Source: Research data, 2025

resilience and sustainability (Szendi, 2021). In the context of traditional arts preservation, this study highlights a context-specific or "mini" pentahelix configuration, in which local communities and artists act as primary knowledge holders, academics contribute methodological and analytical support, and community organizations function as on-the-ground implementers. This configuration reflects an adaptive and culturally grounded form of collaboration rather than a rigid institutional model.

Informant 4 reinforces these complementary roles, while Informant 5 expands the structure into a three-way synergy in which artists contribute cultural authenticity, governments provide funding, training, and regulatory support, and technology actors supply digital tools and distribution channels. Archiving also extends beyond preservation, shaping institutional memory and organizational intent (Putri et al., 2020). Broader citizen engagement through social media further strengthens public participation and heritage protection (Siliutina et al., 2024).

Together, these insights underscore that sustainable digitalization depends on integrated collaboration in which each sector reinforces the others through shared responsibility and mutual expertise. Figure 1 visualizes this collaborative framework, illustrating the interconnected roles of artists, government, academics, technology providers, and local communities in sustainable digital preservation.

CONCLUSION

This study concludes that the revitalization of traditional arts through digital technology is a complex sociocultural process that transcends mere technical intervention, as its success hinges on balancing media innovation with the preservation of philosophical integrity. The findings demonstrate that while digital tools offer significant opportunities to engage younger audiences and safeguard cultural heritage, they pose substantial risks of commodification and cultural distortion if implemented without prioritizing authentic values and community agency. Key systemic challenges identified include limited digital literacy, generational gaps, unequal infrastructure, funding constraints, and unresolved copyright issues, all of which necessitate stronger institutional support. Theoretically, the research contributes to the digital humanities by conceptualizing digitalization as a tool for the Global South to navigate globalization through technological adaptation and intergenerational knowledge transmission. Practical implications suggest a multi-stakeholder framework where artists maintain control over cultural representation, academic institutions co-create ethical documentation, and governments integrate digital preservation into national policy through improved infrastructure and tailored legal protections. Furthermore, technology providers must shift toward culturally sensitive designs that prioritize community data sovereignty over commercial interests. Although the study is limited by a small sample size and a specific focus on the Indonesian context, its collaborative framework remains highly transferable to other regions facing similar tensions between modernization and tradition. Ultimately, sustainable

preservation requires a shift from viewing technology as a mere archive to treating it as a dynamic bridge that reinforces narrative integrity, demanding future longitudinal research to assess the long-term reception and effectiveness of these digital initiatives in an increasingly interconnected world.

Author Contributions

Conceptualization, U.L.S.K and L.R.; methodology, M.; validation, L.R., U.L.S.K and E.S.; formal analysis, M.; investigation, A.J.; resources, L.R.; data curation, L.R.; writing—original draft preparation, E.S.; writing—review and editing, A.J.; visualization, U.L.S.K.; supervision, A.J.; project administration, U.L.S.K.;. All authors have read and agreed to the published version of the manuscript.

AI Declaration

The author declares that artificial intelligence (AI) tools, including ChatGPT (OpenAI) and Grammarly, were used solely to assist with language editing, grammar correction, and improving the clarity of the manuscript. AI tools were not involved in the study design, data collection, analysis, interpretation, or generation of scientific conclusions. All AI-assisted content was carefully reviewed and validated by the author, who takes full responsibility for the integrity and accuracy of the work.

Data Availability Statement

The data supporting the findings of this study are not publicly available due to ethical considerations and the confidentiality of interview participants. The data are available from the author upon reasonable request.

Conflicts of Interest

The author declares no conflict of interest.

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