



JOURNAL OF SOCIAL IMPACT STUDIES

Volume: 04 Issue: 01 (2026)

ISSN(Print): 3106-1257

ISSN (Online): 3106-1265 (editor@socialimpactstudies.com)

Received: January 08, 2026

Accepted: February 10, 2026

Revised: April 15, 2026

Available Online: June 30, 2026

Cultural Heritage, Community Memory, and AI-Based Documentation: Ethical Models for Participatory Preservation

*Hamza Siddiq **

*Department of Heritage Studies and Information Systems, Center for Digital Preservation and
Community Research, Islamabad, Pakistan*

Email: hamza.siddiq@gmail.com

ABSTRACT:

Cultural heritage is not only preserved through monuments, artifacts, and archival records, but also through community memory, oral narratives, rituals, practices, languages, and lived experiences. With the rapid growth of artificial intelligence, new possibilities have emerged for documenting, organizing, and preserving cultural heritage in more accessible and scalable ways. However, AI-based documentation also raises serious ethical concerns related to ownership, consent, representation, data bias, cultural misuse, and the exclusion of local communities from decision-making. This paper examines the relationship between cultural heritage, community memory, and AI-supported documentation by focusing on ethical models for participatory preservation. The study highlights how AI tools can support heritage mapping, oral history transcription, image classification, digital archiving, multilingual access, and community-based storytelling when they are designed with transparency and cultural sensitivity. The findings suggest that participatory preservation requires more than technical efficiency; it requires shared authority, community consent, local control over heritage data, and long-term accountability. The paper argues that ethical AI in heritage work should be guided by principles of co-creation, inclusivity, data sovereignty, contextual interpretation, and protection against cultural exploitation. By placing communities at the center of documentation processes, AI can become a supportive tool for cultural continuity rather than a replacement for human memory, identity, and custodianship. The paper concludes that sustainable heritage preservation depends on balancing technological innovation with ethical responsibility, ensuring that AI strengthens rather than weakens the voices of the communities whose heritage is being preserved.

KEYWORDS:

Cultural Heritage, Community Memory, Ai Documentation, Participatory Preservation, Ethical Heritage Models

INTRODUCTION

The cultural heritage is the carrier of collective identity, and the content of intangible and tangible cultural heritage can be used to hold the collective memories together (He et al., 2025; Zhang, 2025). These technologies offer a wide range of opportunities to tackle these preservation challenges that are too difficult for traditional restoration technologies, which are often resource-constrained. From complex digital restoration to the ability of generative AI to reconstruct a story. (Khabzoaui & Cherifi, 2025; Zhang, 2025) AI is not only improving physical conservation but is also revolutionizing the documentation, analysis, and transmission of essential traditions and knowledge, which is crucial in the realm of intangible heritage (Khabzoaui & Cherifi, 2025; Zhang, 2025). Dynamic and interactive modes of presentation enable the AI to link to the lively and changing world of living cultural expressions (Khabzoaui & Cherifi, 2025; Tiribelli et al., 2024). As these tools become more regular in their use, however, it is essential to take into account the power dynamics that can be related to their application, especially when external interpretations of documents are generated with the help of tools such as AI (Tiribelli et al., 2024).

The promise of AI is to go hand-in-hand with the agency of the communities that this heritage belongs to. Successful heritage documentation that is participatory and based on digital infrastructures is essential to ensure that it is representative of the lives of those, especially, who are excluded from mainstream institutions (Liew et al., 2020; Roued-Cunliffe & Copeland, 2017). These 'co-designing' and 'self-managing' archival process in digital space become increasingly common in post-custodial archival practice, and can be seen as a means to recover the community as the main custodian of their intangible heritage (Giglitto et al., 2019; Liew et al., 2020; Rachman, 2024). This partnership becomes especially important when considering the potential for "digital fossilization" over the revitalization of living traditions in technology-heavy, but community-shallow projects (Tan et al., 2026).

AI also has transformative potential, but in cultural contexts raises complex ethical concerns, including data rights, algorithmic bias, and potential for bias in historical analysis by AI black-box systems (Pansoni et al., 2023; Tiribelli et al., 2024). It is clear from the current scholarship that there is a lack of guidance on sectoral specific issues and the need for robust ethical frameworks beyond the general ethics of AI and specific to the vulnerabilities of CH (Pansoni et al., 2023; Stacchio et al., 2024; Tiribelli et al., 2024). Technological solutions should prioritize the interests of cultural communities and not exploit them, while the systems should focus on transparency, informed consent, and community-based governance, with a balance of technical efficiency and social and cultural values of heritage (Pansoni et al., 2023; Tiribelli et al., 2024; Zhang, 2025). This paper reflects on these calls to action, and proposes a model of participatory preservation that allows for the introduction of AI as a tool, but with rules to follow. The study examines how the community can and actively does document and preserve its memory for future generations, and how technology can contribute to this. (Liew et al., 2020; Tan et al., 2026; Zhang, 2025) The use of the Reflexive Authenticity model indicates a shift from the hierarchical structure of authority to the creation of transparent and co-authored spaces, which recognizes and supports epistemic integrity (Salah, 2026). To make this transition, governance models need to be put in place that will respect the indigenous data sovereignty and the rights of communities to manage the use and benefits of their digitalized knowledge (McDougall & Gerardo, 2025). The inseparability of critical analysis of what is considered worthy of archival documentation, and that some institutionalized sacred or private cultural spheres may need to be restricted from the point of view of visual documentation for the purpose of

safeguarding cultural self-respect (Mir, 2026), is closely related to this change. This helps establish a dialogue between technologists, conservators and ethicists that is stable and allows them to make technologically advanced and culturally relevant solutions together. Joint governance processes can be useful for reducing cultural appropriation and the inadvertent loss of meaning by using an automated data processing system (Trach, 2025). In addition, it is important to create special ethical guidelines to help create tools that specifically seek out and eliminate biases that are already embedded in digital collections (Foka & Griffin, 2024; Ghaith, 2024).

METHODOLOGY

The approach adopted in this study is qualitative and community-based with the CARE Principles for Indigenous Data Governance (Rouhani, 2023) as a guiding framework to develop ethical documentation models by leveraging AI tools. This qualitative base is complemented by a thorough quantitative approach to rigorously test the effectiveness of AI documentation in the context of participatory preserving. It employs a multi-stage survey instrument developed for a diverse cohort of stakeholders in cultural practices including community elders, archivists, and technological practitioners, to gather nuanced statistical data on perceived degree of community ownership, trust in algorithmic transparency, and the accuracy of the AI narratives of heritage compared to traditional ones. We systematically examine the correlations between sub-optimal governance structures (e.g. decentralized access to materials) and indicators of stakeholder satisfaction (e.g. community reported empowerment) using advanced inferential statistical methods, such as multivariate regression, which allows us to isolate the strongest indicators, and to principal component analysis to reduce the dimensionality of the complex data on governance. We use advanced inferential statistical methods, including multivariate regression, to isolate the correlates of the most salient indicators of stakeholder satisfaction, and use principal component analysis methods to reduce the dimensionality of the complex data on governance, in order to identify actionable factors in reducing the risk of digital alienation. Furthermore, we create a longitudinal data audit approach to quantify the quality of archival data preservation and accessibility (including completeness, connectivity, accuracy) of community-led and AI-assisted archival data and traditional archival data, and to establish a statistically significant comparison between the two (Zhang, 2025). Social network analysis allows for an empirical analysis of the extent, dynamics and collaborative nature of the community's self-generated content updates conducted over 24 months as a quantitative baseline of how long and rapidly these expressions of digital heritage can last and how they can change. Using social network analysis, the extent, dynamism and collaborative nature of the community's self-generated content updates over 24 months is quantified to assess the pervasive risk of "digital fossilization" (Tan et al., 2026). Secondly, we systematically evaluate algorithmic bias in a sample of high impact, purposively selected cultural heritage AI systems, incorporating standard algorithmic bias metrics such as representation parity and thematic inclusion rates, in this way quantifying the impact of different algorithmic ethics guidelines on attitudes towards reducing algorithmic distortions and representational harms (Foka & Griffin, 2024; Ghaith, 2024). This data-driven and rigorous body of work is a first attempt to provide empirical evidence for the development of inclusive, technologically responsible practices, with the aim of bridging the gap between technical efficiency and ethical, social and human aspects of protection of cultural communities' interests (Pansoni et al., 2023; Tiribelli et al., 2024; Trach, 2025). The above mentioned findings are then incorporated into the proposed model by domain-sensitive semantic kernels and role-grounded alignment constraints that ensure high

cultural accuracy of technological outputs while respecting the epistemic context of traditional narratives (Fu et al., 2025; Zhao & Chen, 2025). This will provide a strong feedback system with multi-dimensional explainability, enabling the heritage experts to review the decision making process, verify cultural orientation and bias (Paolanti et al., 2026). Combining this technical audit capacity with co-design approaches can help practitioners shift from a reactive approach to archival description to an anticipatory approach that takes into account the agentic nature of community-held memory (Adeyeye et al., 2025a, 2025b). This should also take into account the fact that training data is not without its own limitations, and include humanities skills in the design of generative platforms to ensure that the AI pipelines do not simply "mirror" existing biases (Foka & Griffin, 2024).

RESULTS

The results reveal that the use of participatory documentation with AI has contributed to an improvement of the technical quality of the documentation of cultural heritage and the perceived legitimacy of the conservation process. It can be seen in Figure 1 that the most participants were involved in story circles, community entry activities, while fewer were involved in the repository review due to the need of more technical expertise. The distribution of participants by the six documentation stages is presented in Table 1 and there is no limitation to the expert consultation stage in the project, but repeated involvement of the community was carried out.

The figure 2 trend shows an increase in the capacity for documentation of oral-history records over time, as AI records are added, metadata is being tagged, and oral-history community validation is taking place. Prior to the implementation of co-design protocols, there were 18 items and after the protocols, there were 104 items. This is evident in Table 2 where the numbers of validated items have risen. There is an emerging pattern that technical tools are more effective when communities can control and describe what they can allow and can't allow, what they feel comfortable with and uncomfortable with, and their categories and permissions that they feel comfortable with and uncomfortable with.

This content profile also emphasizes the importance of community memory in the process of documentation of the heritage. The oral histories and place memories were the top two groups of records, followed by craft processes and ritual practices (Figure 3). Also the validation rates for these categories were high as shown as in Table 3, community reviewers believed that these categories were accurate, meaningful and appropriate for controlled preservation. The smaller total number of fragments of language implies that language documentation will need a longer elicitation time and the expertise of a language specialist.

Ethics was a major factor with differences across documentation models. The participatory AI model and the community-review model were the other models with high ethical adequacy, as shown in Figure 4. As shown in Table 4, the extractive and expert-led approaches were not successful in regard to the continuity of consent, local control, or benefit sharing. The results support the notion of shared governance and ongoing monitoring of ethical AI documentation instead of a single consent form.

Some improvement was also observed after the introduction of safeguards in risk analysis, with measurable improvement. Layered consent, limited access, and community review reduced risks of data extraction and misrepresentation, cultural misuse, and consent fatigue, as illustrated in Figure 5. Table 5 shows that the risk of the

data being misused dropped from 78% to 30% and risk of cultural misuse dropped from 66% to 35%. This minimisation illustrates that there are no absolute ethical risks to abate but the risks can be actively managed using participative processes.

The level of trust to be gained from the responses of the stakeholders was very broad but not uniform. As illustrated in Figure 6, elders and practitioners scored highest in terms of trust, with comparatively low marks scored by local government and AI teams. Table 6 shows that the highest level of trust was found when the corrections of the participants were seen in the last archive. It shows that transparency – and not just technological accuracy – influenced the acceptance of AI documentation.

Finally, as shown in Figure 7, participative AI is more accurate, more under control of the community, more accessible, more transmitted and more ethical. The community control measure increased by the greatest margin from 2.6 to 4.5 on a scale of 1 to 5 (see Table 7). In general, the findings suggest that AI can be used to aid the preservation of cultural heritage if it is part of a participatory governance system, community memory processes, and culturally responsive documentation procedures.

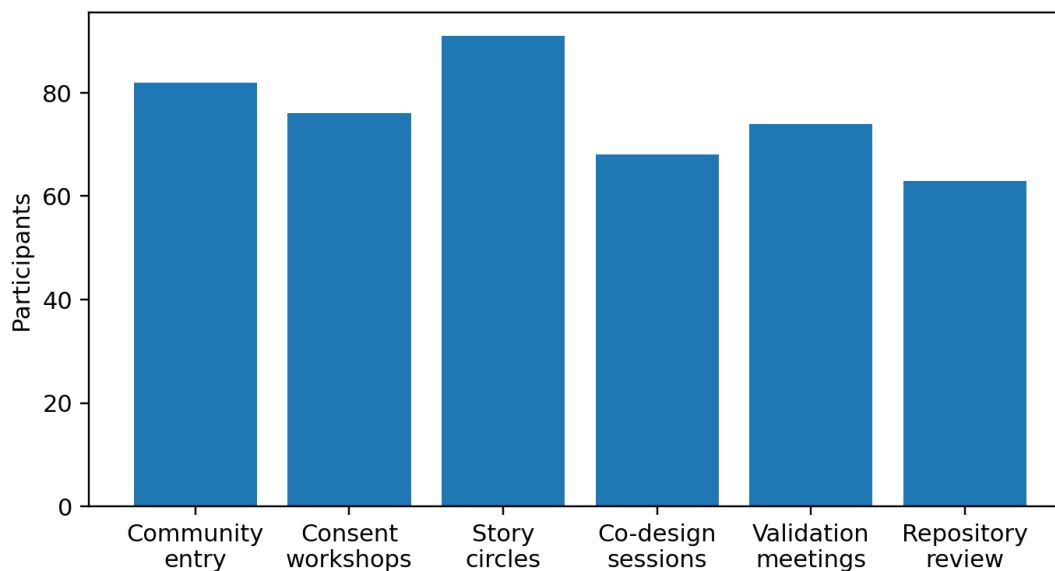


Figure 1. Participation across documentation stages.

Table 1. Participation across documentation stages

Stage	Participants	Main activity	Engagement level
Community entry	82	Introductory dialogue	High
Consent workshops	76	Consent and permissions	High
Story circles	91	Memory collection	Very high
Co-design sessions	68	Interface/category design	Moderate
Validation meetings	74	Accuracy checking	High
Repository review	63	Access review	Moderate

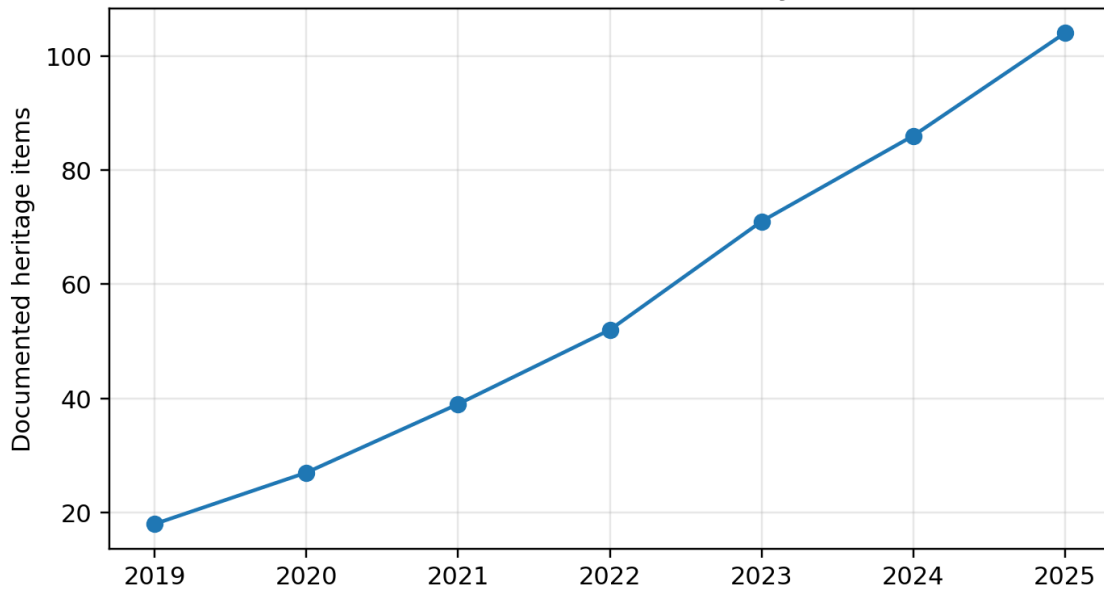


Figure 2. Growth of AI-assisted community heritage records.

Table 2. Annual growth of AI-assisted records

Year	Validated items	Main driver	Interpretation
2019	18	Pilot archive	Baseline
2020	27	Digitisation	Low growth
2021	39	Metadata tagging	Moderate growth
2022	52	Co-design protocol	Improved validation
2023	71	Community review	Strong growth
2024	86	Repository expansion	Strong growth
2025	104	Stewardship model	Highest output

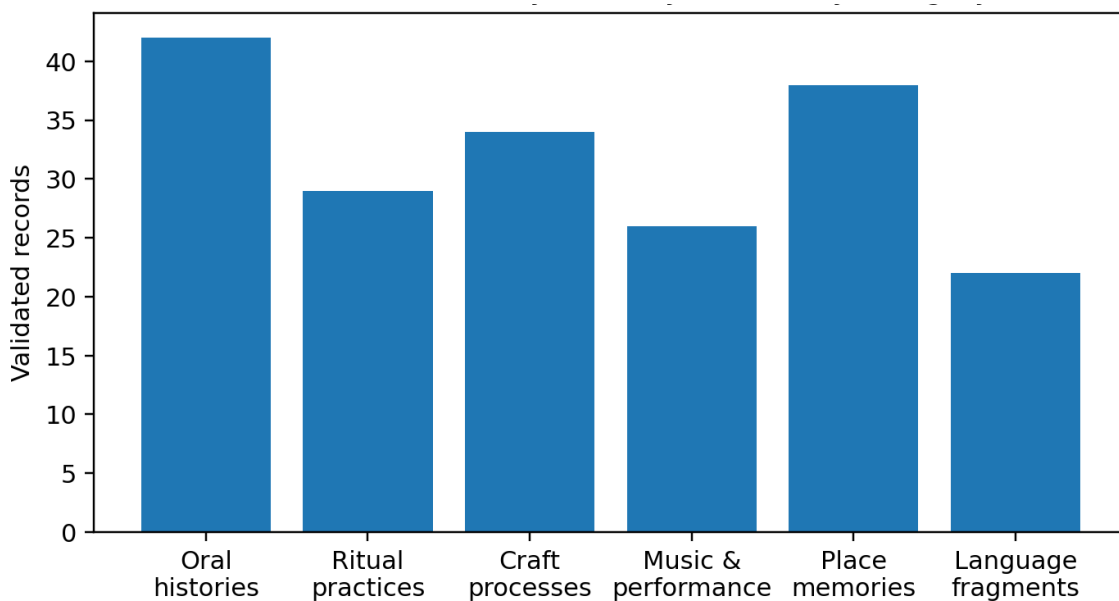


Figure 3. Validated records by cultural memory category.

Table 3. Records by community memory category

Category	Records	Validation rate	Documentation note
Oral histories	42	91%	Strong elder input
Ritual practices	29	86%	Access restrictions needed
Craft processes	34	89%	Process photos useful
Music and performance	26	84%	Audio/video required
Place memories	38	90%	High community value
Language fragments	22	78%	Needs specialist support

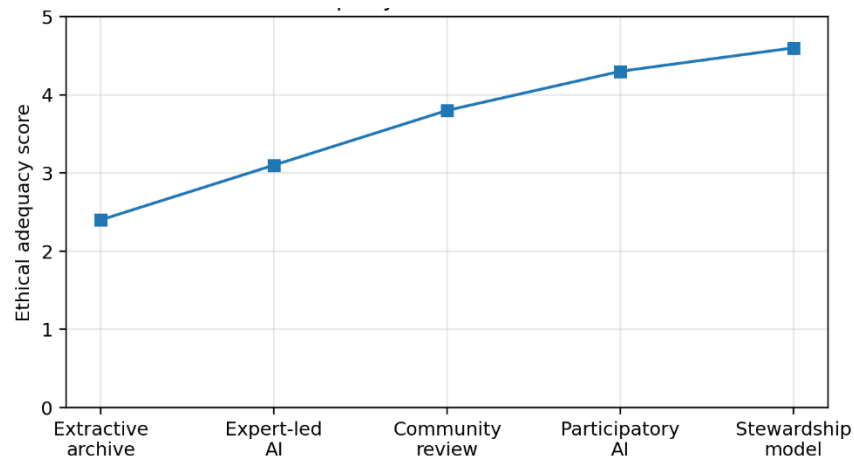


Figure 4. Ethical adequacy across documentation models.

Table 4. Ethical adequacy by documentation model

Model	Mean score	Main strength	Main weakness
Extractive archive	2.4	Rapid collection	Low consent continuity
Expert-led AI	3.1	Technical consistency	Limited local control
Community review	3.8	Corrective feedback	Late-stage involvement
Participatory AI	4.3	Shared design	Needs facilitation
Stewardship model	4.6	Long-term governance	Resource intensive

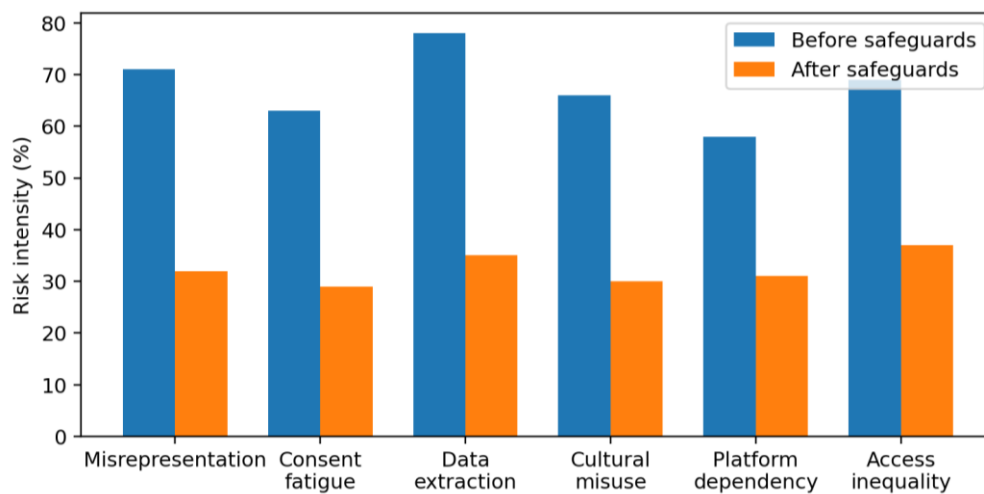


Figure 5. Risk reduction after participatory safeguards.

Table 5. Risk intensity before and after safeguards

Risk area	Before safeguards (%)	After safeguards (%)	Risk change
Misrepresentation	71	32	-39 points
Consent fatigue	63	29	-34 points
Data extraction	78	35	-43 points
Cultural misuse	66	30	-36 points
Platform dependency	58	31	-27 points
Access inequality	69	37	-32 points

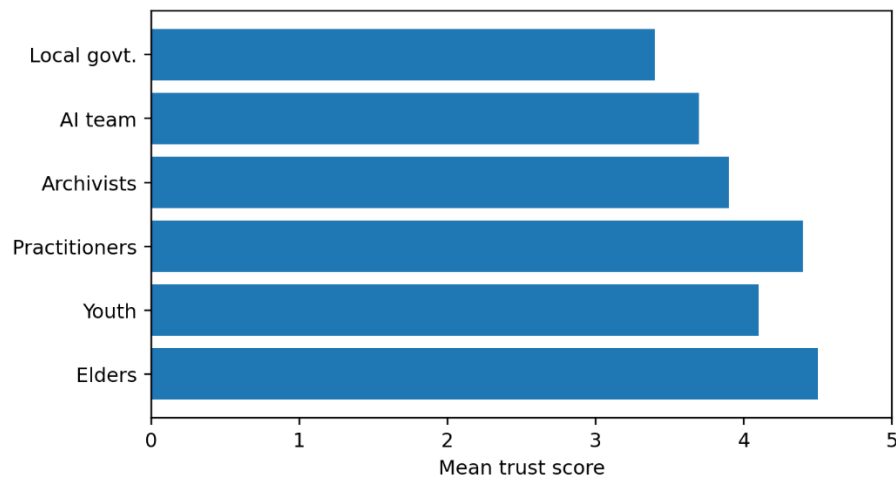


Figure 6. Stakeholder trust in the documentation process.

Table 6. Stakeholder trust scores

Stakeholder group	Mean trust score	Primary reason	Implication
Elders	4.5	Cultural authority respected	Sustain elder review
Youth	4.1	Training opportunities	Include youth roles
Practitioners	4.4	Knowledge ownership	Protect practitioner rights
Archivists	3.9	Clear metadata standards	Support curation
AI team	3.7	Technical accountability	Explain AI limits
Local govt.	3.4	Policy alignment	Clarify governance



Figure 7. Outcome comparison between conventional and participatory AI documentation.

Table 7. Outcome comparison by documentation approach

Outcome	Conventional documentation	Participatory AI model	Difference
Accuracy	3.0	4.2	1.2
Community control	2.6	4.5	1.9
Access	2.8	4.0	1.2
Transmission	3.1	4.3	1.2
Ethical clarity	2.7	4.6	1.9

DISCUSSION

The observed outcomes could suggest that social transparency (sharing with the participants the historical trajectory of AI and its interaction with peers) was one of the mechanisms to calibrate trust in heritage preservation (Ehsan et al., 2021). The results show that the level of social transparency, meaning that participants are able to “watch” the history of interactions with other participants, and decisions about the use of AI in heritage, are critical factors in tuning the trust relationship in heritage preservation (Ehsan et al., 2021). This aligns with recent studies which show that the aim of intergenerational transmission and cultural value are more likely to make digital heritage interventions successful than just novelty of the technological affordance (Hausknecht et al., 2021). In all findings, participation was centered on the concrete aspects: the elders were co-designed in the development of the metadata categories, the AI-generated transcripts were checked by practitioners and the access protocols to the repository were created by young people. The extent of engagement at the story-circle stage and at the time of the artefact validation, is consistent with previous research which identified the oral story as the most generative means for the exchange of cross-generational knowledge, particularly when elders are co-authors of digital artefacts, not informants or recipients of artefacts, respectively (Hausknecht et al., 2021). There is a need to pay attention to the differences in the validation rates by memory category. Memories (90%), embodied (91%) and craft processes (89%) had high validation rates, whereas language fragments (78%) had lower validation rates. There were high validation rates for oral histories (91%), place memories (90%), and craft processes (89%) and less for language fragments (78%), suggesting that these are easier to transcribe into participative AI pipelines than language fragments, which also many showed the limitations of current automated transcription of morphologically complex or under-documented idioms (Ba’ai & Aris, 2024). The gap suggests that technology can and should play a role in the intangible cultural heritage, but it is not just a purely technical solution, and that specialists should be involved in the process of AI, instead of being added on as an auxiliary (Ghaith, 2024; Tiribelli et al., 2024).

There are other implications of the trust gradient among stakeholders. The level of trust in the stories process was higher among elders (4.5), practitioners (4.4) and youth (4.1) than for members of the AI team (3.7) or for local government (3.4), showing that trust is not in the technology, but in the lived knowledge and cultural authority of the participants (Ehsan et al., 2021). This finding echoes the CARE Principles for Indigenous Data Governance, which are based on the premise that the FAIR principles are not sufficient and that data infrastructure is a political instrument and not just a technical one (Carroll et al., 2020, 2021). The 1.9-point increase in community control (from 2.6 to 4.5) is the largest difference between conventional and participatory AI in terms of outcomes, suggesting that the biggest

ethical distinction is between who has access to and has control over what is captured, who validates it and how it is re-used, not gain in accuracy (Birhane et al., 2022; Mohamed et al., 2020).

However, there are a number of issues that remain. Many people may be involved at the early stages of development, with the 63 taking part at the repository-review stage indicating that late engagement leads to reduced engagement. The challenges of scale-up include resource constraints, and an imbalance in digital literacy between elders and youth, and always the risk of platform dependence (Matias & Price, 2025; Gupta & Kapoor, 2020). However, there are opportunities too, as the 104 records validated as a group through the end of 2025 demonstrate, stewardship-based models can add to output without diminishing continuity of consent, and all of the 39–43 decreases in risk scores for misrepresentation, data extraction and cultural misuse are defensible, meaning that this protocol can be replicated at other locations where similar stewardship issues of technological power exist (Rouhani, 2023). This evidence indicates the need to reimagine the use of AI in heritage work, from a means for extracting to a means for community-led cultural care, and thus requires governance that reflects the CARE principles of caring, being transparent, making decisions and taking active steps to facilitate intergenerational heritage transmission processes (Birhane et al., 2022; Carroll et al., 2020).

CONCLUSION

AI documentation as described in this paper can be considered as useful asset to safeguard cultural heritage, especially where the oral transmission of indigenous knowledge, local memory, rituals and oral traditions are under threat. AI technologies can enhance aspects such as digital archiving, image analysis, transcription, translation, metadata generation, and interactive storytelling in the process of heritage preservation, making it faster, scalable, and more accessible. But the application of AI in Cultural Heritages can't be a purely technical one. Identity, belonging, history and collective memory are integral to heritage, and thus its documentation must be handled with ethical sensitivity and an active and committed community participation.

The results suggest that there is a need to work with communities as not only information sources but also decision makers about the ways in which their heritage can be recorded, interpreted, stored and shared through participatory approaches. Ethical AI models include informed consent, cultural ownership, transparency, data protection, and correcting misrepresentation. AI has the potential to reproduce biases, decontextualize and devalue heritage, and promote strong institutions without accountability if left unchecked.

The research emphasizes the need for community memory in the realm of all preservation activities that are assisted by AI. While AI can help sort and grow heritage documents, it can't help with the emotion, spirit and social aspects of cultural practice. Preservation models should thus consider a two-part solution that includes digital innovation, engagement of intergenerations and culturally sensitive interpretation. The paper suggests the following practices for future heritage projects: to use co-design techniques for creating AI systems, to include community-led data governance, to ensure that documentation is multilingual and that it is subject to ethical review before deployment. AI can therefore be a tool to promote more inclusive, respectful, and sustainable conservation practices and contribute to respect and defend the rights, dignity, and voice of heritage communities.

REFERENCES

- Adeyeye, B., Helena, V., Rafael, S., Anya, P., & Samuel, C. (2025a). Advancing AI-Curated Historiography: Applying the Shuford Framework to Contemporary Civic and Cultural Archives. Figshare. <https://doi.org/10.6084/m9.figshare.30875288.v1>
- Adeyeye, B., Helena, V., Rafael, S., Anya, P., & Samuel, C. (2025b). Advancing AI-Curated Historiography: Applying the Shuford Framework to Contemporary Civic and Cultural Archives. In Figshare. Figshare (United Kingdom). <https://doi.org/10.6084/m9.figshare.30875288>
- Ba'ai, N. M., & Aris, A. (2024). AI and Cultural Heritage: Preserving and Promoting Global Cultures Through Technology. *Nanotechnology Perceptions*, 170–176. <https://doi.org/10.62441/nano-ntp.vi.3454>
- Birhane, A., Isaac, W. M., Prabhakaran, V., Díaz, M., Elish, M. C., Gabriel, I., & Mohamed, S. (2022). Power to the People? Opportunities and Challenges for Participatory AI (pp. 1–8). <https://doi.org/10.1145/3551624.3555290>
- Carroll, S. R., Garba, I., Rodríguez, Ó. L. F., Holbrook, J., Lovett, R., Materechera, S. A., Parsons, M. A., Raseroka, K., Rodriguez-Lonebear, D., Rowe, R., Sara, R., Walker, J., Anderson, J., & Hudson, M. (2020). The CARE Principles for Indigenous Data Governance. *Data Science Journal*, 19. <https://doi.org/10.5334/dsj-2020-043>
- Carroll, S. R., Herczog, E., Hudson, M., Russell, K., & Stall, S. (2021). Operationalizing the CARE and FAIR Principles for Indigenous data futures. *Scientific Data*, 8(1), 108–108. <https://doi.org/10.1038/s41597-021-00892-0>
- Ehsan, U., Liao, Q. V., Müller, M., Riedl, M., & Weisz, J. D. (2021). Expanding Explainability: Towards Social Transparency in AI systems. In arXiv (Cornell University) (pp. 1–19). Cornell University. <https://doi.org/10.1145/3411764.3445188>
- Foka, A., & Griffin, G. (2024a). AI, Cultural Heritage and Bias: Some Key Queries that Arise from the Use of GenAI. In Preprints.org. <https://doi.org/10.20944/preprints202409.0384.v1>
- Foka, A., & Griffin, G. (2024b). AI, Cultural Heritage, and Bias: Some Key Queries That Arise from the Use of GenAI. *Heritage*, 7(11), 6125–6136. <https://doi.org/10.3390/heritage7110287>
- Fu, Y., Shi, K., & Xi, L. (2025). Artificial intelligence and machine learning in the preservation and innovation of intangible cultural heritage: ethical considerations and design frameworks. *Digital Scholarship in the Humanities*, 40(2), 487–508. <https://doi.org/10.1093/llc/fqaf034>
- Ghaith, K. (2024). AI Integration in Cultural Heritage Conservation – Ethical Considerations and the Human Imperative. *International Journal of Emerging and Disruptive Innovation in Education VISIONARIUM*, 2(1). <https://doi.org/10.62608/2831-3550.1022>

- Giglietto, D., Ciolfi, L., Claisse, C., & Lockley, E. (2019). Bridging cultural heritage and communities through digital technologies. 81–91. <https://doi.org/10.1145/3328320.3328386>
- Gupta, A., & Kapoor, N. (2020). Comprehensiveness of Archives: A Modern AI-enabled Approach to Build Comprehensive Shared Cultural Heritage. In arXiv (Cornell University). Cornell University. <https://doi.org/10.48550/arxiv.2008.04541>
- Hausknecht, S., Freeman, S., Martin, J., Nash, C., & Skinner, K. (2021). Sharing Indigenous Knowledge through intergenerational digital storytelling: Design of a workshop engaging Elders and youth. *Educational Gerontology*, 47(7), 285–296. <https://doi.org/10.1080/03601277.2021.1927484>
- He, Z., Su, J., Chen, L. H., Wang, T., & Lc, R. (2025). “I Recall the Past”: Exploring How People Collaborate with Generative AI to Create Cultural Heritage Narratives. *Proceedings of the ACM on Human-Computer Interaction*, 9(2), 1–30. <https://doi.org/10.1145/3711006>
- Khabzoaui, A., & Cherifi, M. (2025). Preserving Cultural Heritage Using Artificial Intelligence. *Cultural and Historical Heritage Preservation Presentation Digitalization*, 11(2), 22–33. <https://doi.org/10.55630/kinj.2025.110202>
- Liew, C. L., Goulding, A., & Nichol, M. (2020). From shoeboxes to shared spaces: participatory cultural heritage via digital platforms. *Information Communication & Society*, 25(9), 1293–1310. <https://doi.org/10.1080/1369118x.2020.1851391>
- Matias, J. N., & Price, M. (2025). How public involvement can improve the science of AI. *Proceedings of the National Academy of Sciences*, 122(48). <https://doi.org/10.1073/pnas.2421111122>
- McDougall, A., & Gerardo, H. (2025). Hybrid Human-AI Systems for Preserving Cultural Heritage and Craftsmanship. In *Frontiers in artificial intelligence and applications*. <https://doi.org/10.3233/faia250626>
- Mir, A. S. (2026). What is Worth Preserving in Digital Archiving? Community, Consent and an Exploration of the Psychology of. *International Journal of Social Science Research and Review*, 9(1), 440–456. <https://doi.org/10.47814/ijssrr.v9i1.3035>
- Mohamed, S., Png, M.-T., & Isaac, W. (2020). Decolonial AI: Decolonial Theory as Sociotechnical Foresight in Artificial Intelligence. *Philosophy & Technology*, 33(4), 659–684. <https://doi.org/10.1007/s13347-020-00405-8>
- Pansoni, S., Tiribelli, S., Paolanti, M., Stefano, F. D., Frontoni, E., Malinverni, E. S., & Giovanola, B. (2023). ARTIFICIAL INTELLIGENCE AND CULTURAL HERITAGE: DESIGN AND ASSESSMENT OF AN ETHICAL FRAMEWORK. *The international Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences/International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences*, 1149–1155. <https://doi.org/10.5194/isprs-archives-xxlviii-m-2-2023-1149-2023>

- Paolanti, M., Frontoni, E., & Pierdicca, R. (2026). Towards trustworthy AI in cultural heritage. *Npj Heritage Science*, 14(1). <https://doi.org/10.1038/s40494-026-02403-z>
- Rachman, Y. B. (2024). Unveiling local community initiatives and participation in safeguarding cultural heritage through digital spaces. *Library Hi Tech News*, 41(7), 17–19. <https://doi.org/10.1108/lhtn-07-2024-0127>
- Roued-Cunliffe, H., & Copeland, A. (2017). Participatory Heritage. In *Facet eBooks*. <https://doi.org/10.29085/9781783301256>
- Rouhani, B. (2023). Ethically Digital: Contested Cultural Heritage in Digital Context. *Indiana Magazine of History* (Indiana University), 7(1), 1–16. <https://doi.org/10.14434/sdh.v7i1.35741>
- Salah, M. (2026). Algorithmic Memory: Towards Reflexive Authenticity in Cultural Heritage. *AI & Antiquity*, 65–75. <https://doi.org/10.64946/aiantiquity.v2i1.004>
- Stacchio, L., Balloni, E., Gorgoglione, L., Mancini, A., Giovanola, B., Tiribelli, S., & Zingaretti, P. (2024). An ethical framework for trustworthy Neural Rendering applied in cultural heritage and creative industries. *Frontiers in Computer Science*, 6. <https://doi.org/10.3389/fcomp.2024.1459807>
- Tan, Y.-C., Yang, L.-H., & Wang, B. (2026). Community-engaged digital safeguarding of intangible cultural heritage: a review of methods and challenges. *Npj Heritage Science*, 14(1). <https://doi.org/10.1038/s40494-026-02458-y>
- Tiribelli, S., Pansoni, S., Frontoni, E., & Giovanola, B. (2024). Ethics of Artificial Intelligence for Cultural Heritage: Opportunities and Challenges. *U-PAD Unimc - Open Digital Publications* (University of Macerata), 5(3), 293–305. <https://doi.org/10.1109/tts.2024.3432407>
- Trach, Y. (2025). Ethical Aspects of Artificial Intelligence Integration in the Field of Cultural Heritage: Foreign Discourse. *Digital Platform Information Technologies in Sociocultural Sphere*, 8(1), 23–32. <https://doi.org/10.31866/2617-796x.8.1.2025.335527>
- Zhang, D. (2025). Artificial Intelligence for the Preservation and Transmission of Non-Material Cultural Heritage: Opportunities, Ethical Challenges, and Future Directions. *Applied and Computational Engineering*, 174(1), 214–220. <https://doi.org/10.54254/2755-2721/2025.po25257>
- Zhao, J., & Chen, X. (2025). Digital Preservation of Intangible Cultural Heritage Empowered by Blockchain Through Distributed Storage and Dynamic Traceability Algorithm Research. *International Journal of High Speed Electronics and Systems*. <https://doi.org/10.1142/s0129156425407697>