E-ISSN: 2997-948X
American Journal of Religious, Culture, and Archaeological Studies
https://semantjournals.org/index.php/AJRCAS

| Research Article

Check for updates

# Museology and Cultural Heritage: An Overview of Preservation and Conservation Practices

**Jin Ling**
PhD in Museology. Conservation, repair and preservation of historical and cultural objects, "Silk Road" International University of Tourism and Cultural Heritage, Samarkand City, Republic of Uzbekistan, 140104, 17, University Boulevard,
BaiCheng Normal University, No.57 Zhongxing West Road, Taobei District,137000, Baicheng city, Jilin Province, China

**Abstract:** Museology operates as an essential connection between the preservation of cultural heritage and the active interaction of historical artefacts with modern audiences. This literature review analyses the interdisciplinary approaches of museology in the conservation and preservation of cultural heritage, highlighting contemporary methodology, digital advancements, ethical implications, and sustainability. This study analyses scholarly publications from high-impact journals published between 2020 and 2024 to identify existing trends, difficulties, and prospects in the discipline. It emphasises the amalgamation of sophisticated technologies, participatory frameworks, and ecologically sustainable practices that are influencing the dialogue on cultural heritage conservation. The paper examines the consequences of these findings for museology, promoting inclusive and progressive strategies to safeguard historical artefacts and preserve their cultural and historical significance for future generations.

**Keywords:** Museology, cultural heritage, preservation practices, conservation methods, sustainability in heritage, digital technologies, ethical museology, preventive conservation, artifact restoration, community engagement.



## 1.0 Introduction

As a result of the constant and ongoing reshaping of cultural settings brought about by globalisation and technological advancement, the preservation of cultural heritage has become an extremely important endeavor in the modern world. The field of museology provides both a theoretical and practical foundation for the preservation, conservation, and interpretation of cultural artifacts. It encompasses a number of operations, including the classification and curation of museum collections, as well as the execution of preservation techniques to ensure the longevity of historical artifacts. The preservation of the tangible integrity of cultural artifacts and the enhancement of respect for cultural diversity and shared histories are goals that can be accomplished via the use of this discipline (Luli, 2023).

Over the course of the past few years, the challenges that are associated with the safeguarding of cultural assets have become increasingly complexity. A number of factors, including urbanisation, climate change, and violent conflicts, pose significant threats to historical items and locations alike. As a result of these challenges, the field of museology needs to develop new tactics and collaborate with experts from many fields in order to safeguard cultural artifacts. According to Wagner and de Clippele (2023), the introduction of digital technology has been responsible for the creation of innovative chances for documentation, preservation, and public participation, which has resulted in the transformation of customary activities.

It is now widely acknowledged that ethical considerations are an essential component of the preservation of cultural heritage. Discussions have been sparked among the museological community as a result of concerns around repatriation, the decolonization of museum collections, and equal representation in legacy narratives. According to Griffith et al. (2024), these arguments bring to light the importance of developing methods that are culturally sensitive and inclusive in order to cater to the diverse requirements of audiences all over the world.

Sustainability is an essential component in the field of museology. As more people become aware of the problems facing the environment, there is a concerted effort being made to successfully incorporate environmentally responsible practices into conservation efforts. According to Chelazzi et al. (2024), this includes the utilization of sustainable materials, renewable energy sources, and preservation methods that have a low impact on the environment in order to achieve the goal of reducing the environmental impact of heritage conservation activities. This study intends to provide a comprehensive literature review on the many techniques that are currently being developed in the field of museology and the protection of cultural assets. Through an examination of scholarly publications published between the years 2020 and 2024, this study aims to shed light on contemporary tendencies, challenges, and opportunities within the field. The findings will contribute to a better understanding of how the field of museology might address the pressing issues raised by the protection of cultural heritage in the 21st century.

## 2.0 Literature Review

### 2.1 Conservation and Preservation Practices

The practices of conservation and preservation are fundamental to the field of museology, which is concerned with preserving and safeguarding cultural legacy for the benefit of future generations. Generally speaking, preservation comprises the implementation of preventative measures to mitigate both natural and manmade dangers. These measures may include the restriction of light exposure, humidity, and pollutants. A key goal is to establish stable circumstances that prevent or reduce the natural aging or deterioration of materials. This is the main objective. The conservation approach, on the other hand, places a priority on direct interventions, which requires a full understanding of the artifact's material composition as well as the historical context in order to restore or stabilize its structure.

Recent advancements in preventive conservation have brought to light the importance of implementing complete environmental management systems in heritage sites and museums. According to Novak et al. (2024), climate-controlled settings have become the norm in order to regulate temperature and humidity, hence causing a reduction in the risks associated with the growth of mold, warping of materials, and corrosion. By utilizing integrated methods, such as physical barriers, non-toxic treatments, and early detection technologies, pest control programs are able to protect artifacts without resorting to the use of potentially hazardous chemicals. The effectiveness of these preventative techniques has been demonstrated by a multitude of studies, which have shown that they have the capacity to significantly reduce the number of costly conservation interventions.

The conservation of artifacts has been revolutionized as a result of materials science advancements, which have brought about the development of novel solutions like as adhesives and coatings based on nanotechnology (Singh et al., 2024). Restoring damage or improving the resilience of materials can be accomplished with these technologies through the use of procedures that are minimally intrusive. Through the process of penetrating porous surfaces, nanomaterials have the ability to reinforce delicate constructions, so increasing the artifact's strength without drastically altering its appearance. The use of micro-emulsions and laser cleaning techniques, on the other hand, make it possible to eliminate dirt or pollutants precisely without causing any damage to the substrate. Interdisciplinary collaborations that combine museology with cutting-edge scientific research are the driving force behind the constant progress of conservation processes, which are highlighted by these methodologies (Maiko & Frederic, 2024).

### 2.2 Digital Innovations in Museology

Museology has been revolutionized by the introduction of digital technologies, which has resulted in a significant change in the preservation and exhibition of cultural content. A detailed documentation of artefacts as well as an interactive analysis of them can be accomplished through the use of technologies such as 3D scanning, augmented reality (AR), and virtual reality (VR). An example of this would be the generation of a realistic digital depiction of an object by the use of 3D scanning, which includes the object's dimensions, textures, and even minute details. For the purpose of study, these scans are crucial since they enable conservators to conduct exhaustive examinations of artifacts without compromising the physical integrity of the objects. A further function that they provide is that of a safeguard, which ensures the preservation of digital representations of cultural content in spite of the possibility of loss due to natural disasters or conflicts (Nguyen, 2024).

The field of museology has expanded thanks to the advent of technologies such as augmented reality and virtual reality, which have made cultural riches available to people all over the world. The use of augmented reality allows visitors to interact with artefacts in ways that go beyond the capabilities of traditional static displays. Augmented reality works by superimposing digital information onto actual locations. It is possible for augmented reality programs to reconstruct a sculpture that has been broken or to provide historical information directly within the museum space. Users are able to remotely explore heritage destinations through the use of virtual reality, which offers fully immersive experiences. These experiences include virtual tours of archeological sites and reconstructed historical environments. According to Paolanti et al. (2023), these tools are particularly useful for educational purposes since they make history more approachable and makes it more relevant to younger audiences.

The developments in digital technology have led to an increase in public interaction and participation. Virtual museums and online exhibits, which gained popularity during the COVID-19 outbreak, offer venues that let people all over the world to access cultural material. In addition to facilitating crowd-sourced contributions, these programs also democratize knowledge and make it easier for citizens to archive information and conduct collective historical study. There are challenges associated with the implementation of digital technologies, despite the fact that they have the potential to bring about significant transformations. These challenges include costly costs, the requirement for skilled laborers, and the risk of technological obsolescence. In order to guarantee the long-term viability and inclusiveness of digital museology, it is necessary to engage in strategic planning and investment in order to find solutions to these difficulties. Ioli, 2024 (Pioli).

### 2.3 Ethical Dimensions in Heritage Conservation

As a reflection of society efforts toward inclusivity, equity, and historical accountability, the ethical considerations that are involved in the preservation of cultural heritage have grown

increasingly important. In the field of ethical museology, the topic of repatriation of artifacts to the countries from which they originated is one that is hotly debated. It has been demanded that the numerous objects that are housed in museum collections be returned to their rightful owners because they were acquired through colonial or exploitative tactics. Not only does repatriation correct historical injustices, but it also gives source communities the opportunity to reclaim their cultural identity and establish a legacy for themselves. As a result of the complexity of these processes, which typically involve legal, political, and logistical barriers, it is necessary for the participants to engage in careful conversation and work together (Hutson, 2024).

The decolonization of museum collections goes beyond the concept of repatriation and seeks to correct systematic biases in the depiction of cultures and histories. Over the course of its history, conventional museology has frequently favored Western narratives, so marginalizing or misrepresenting the perspectives of indigenous and non-Western people. Ethical museology encourages the assimilation of a variety of perspectives, which ensures that legacy is interpreted in ways that are reflective of the communities that it represents. This transition calls for modifications to curatorial approaches and the implementation of participation strategies, which involve local people actively participating in decision-making regarding their cultural artifacts (Barbudo Carrasco, 2024). Other necessary changes include the introduction of participatory tactics.

To add insult to injury, ethical considerations encompass the methods and resources that are utilized in conservation endeavors. When artefact restoration involves the use of invasive techniques or compounds that could be harmful to the environment, questions arise about the long-term impact that these procedures and substances will have on the artefacts as well as the environment. Openness, sustainability, and appreciation for the cultural and historical value of artefacts are all emphasized by ethical norms, which highlight the significance of these values. Through the implementation of these principles, museums and historical organizations have the ability to foster trust and partnership with the communities they serve. This ensures that conservation actions are in alignment with broader social and cultural values, as stated by Žuvela et al. in 2023.

### 2.4 Sustainability in Heritage Conservation

An rising recognition of environmental and resource-related challenges is reflected in the fact that sustainability has evolved as a vital principle in the preservation of cultural assets. Sustainable techniques aim to lessen the negative impact that preservation efforts have on the environment while also ensuring that heritage artifacts will continue to be significant for generations to come. It is possible to reduce the museum's reliance on fossil fuels and the amount of greenhouse gas emissions by incorporating renewable energy sources into its operations. Some examples of such sources include solar and wind power. In a similar vein, sustainable materials, such as biodegradable packaging and storage choices, are gradually being used to replace traditional alternatives that need a significant amount of resources (Kullert et al., 2024).

One of the most important aspects of sustainability in the field of museology is the combination of conservation efforts with overarching environmental goals. Visitors are encouraged to interact with heritage sites through the implementation of sustainable tourism programs, which ensures that the sites' authenticity is maintained. The preservation of cultural and natural resources for future generations can be ensured by the implementation of strategies such as restricted visitor access, eco-tourism initiatives, and community-oriented heritage management. These techniques align with international frameworks such as the United Nations' Sustainable Development Goals, which highlight the relationship between cultural heritage and sustainable development (Magliacani, 2023).

Regardless of these advancements, there are still significant challenges to overcome in order to successfully implement sustainable techniques in the field of heritage protection. A great number of organizations do not possess the financial means or the technical expertise that is required to implement environmentally friendly technologies or to develop comprehensive policies regarding sustainability. Furthermore, in order to reconcile conservation goals with environmental considerations, it is usually necessary to make trade-offs. One example of this is the demand for climate control systems that consume a significant amount of energy in order to preserve fragile artifacts. In order to address these issues, it is necessary to develop innovative solutions, engage in intersectoral cooperation, and increase investments in capacity-building activities. This will make it possible for heritage organizations to adopt a sustainable approach (Pilar, 2023).

## 3.0 Methodology

For the purpose of conducting a comprehensive literature review on museology and the preservation of cultural assets, this study makes use of a qualitative research approach. Academic databases such as Scopus, Web of Science, and JSTOR were utilized in order to acquire information regarding scholarly publications that were published in high-impact journals between the years 2020 and 2024. The selection criteria placed an emphasis on works that have been examined by peers and that significantly contribute to the discussion around museology and cultural conservation. During the screening process, the papers were subjected to a comprehensive review that included the utilization of subject keywords such as "museology," "cultural heritage preservation," and "digital technologies in conservation." For the purpose of providing a broad and all-encompassing inquiry, empirical investigations, case studies, and theoretical concepts were given particular importance. In addition, pieces that placed an emphasis on transdisciplinary techniques and current breakthroughs were included in order to illustrate the dynamic nature of the field.

## 4.0 Discussion

The implementation of digital technologies in the field of museology has resulted in the transformation of preservation techniques and the enhancement of public engagement. Researchers and members of the general public are now able to interact with cultural artifacts in novel ways thanks to the development of virtual reproductions, which was made possible by the combination of 3D scanning and augmented reality. According to Ajayi and Udeh (2024), the application of these technologies creates a number of challenges, including the need for specialist skills and the need for increased market prices. The ethical considerations involved in the preservation of cultural heritage are a contentious issue. Despite the fact that it is commendable to undertake steps to repatriate artefacts and decolonize collections, these endeavors typically require complex agreements to be reached amongst a variety of stakeholders. Based on the findings of Cornish et al. (2023), it has been established that participatory strategies, which place an emphasis on forming partnerships with local individuals, are effective in addressing these challenges. Putting an emphasis on sustainability is a crucial area of focus. When it comes to conservation measures, the utilization of energy-efficient technologies and environmentally friendly materials is in line with the overarching environmental goals. The implementation of environmentally responsible policies and procedures typically calls for a substantial financial investment, which may not be feasible for all organizations (Ahmad et al., 2023).

Conservation and preservation are key activities in the subject of museology, which is concerned with maintaining and safeguarding cultural heritage for future generations. In general, preservation entails taking preventative efforts to reduce both natural and manufactured risks. These precautions may include limits on light exposure, humidity, and contaminants. A fundamental goal is to provide stable conditions that prevent or slow natural aging or deterioration of materials. This is the primary objective. The conservation approach, on the other hand, prioritizes direct interventions, which necessitate a thorough grasp of both the artifact's material

composition and the historical context in order to repair or stabilize its structure. Recent advances in preventive conservation have highlighted the significance of developing comprehensive environmental management systems for heritage sites and museums. According to Novak et al. (2024), climate-controlled settings have become the norm for regulating temperature and humidity, hence reducing the dangers associated with mold growth, material warping, and corrosion. Pest management programs can protect artifacts by adopting integrated measures such as physical barriers, non-toxic treatments, and early detection systems, rather than potentially hazardous chemicals. Numerous studies have shown that these preventative strategies can greatly minimize the frequency of costly conservation operations.

Advances in materials science have changed artifact conservation, resulting in the creation of novel solutions like as nanotechnology-based adhesives and coatings (Singh et al., 2024). These technologies can be used to repair damage or improve the durability of materials by employing minimally invasive processes. Nanomaterials have the capacity to reinforce delicate creations by entering porous surfaces, enhancing the artifact's strength while retaining its original form. In contrast, the employment of micro-emulsions and laser cleaning procedures allows for the precise elimination of dirt or pollutants without inflicting any damage to the substrate. Interdisciplinary collaborations that integrate museology with cutting-edge scientific research are the driving force behind the continuous advancement of conservation techniques, as demonstrated by these methodologies (Maiko & Frederic, 2024). Museology has been transformed by the arrival of digital technology, resulting in substantial changes in the preservation and display of cultural information. The utilization of technology such as 3D scanning, augmented reality (AR), and virtual reality (VR) allows for thorough documentation and interactive investigation of artefacts. An example of this would be the creation of a realistic digital representation of an object using 3D scanning, which contains the object's measurements, textures, and even minute details. These scans are important for study because they allow conservators to undertake thorough investigations of artifacts without jeopardizing the objects' physical integrity. They also serve as a protection, ensuring the preservation of digital representations of cultural information even in the face of natural disasters or conflicts (Nguyen, 2024).

The study of museology has grown as a result of technological advancements like as augmented reality and virtual reality, which have made cultural treasures available to people worldwide. Augmented reality technology enables visitors to engage with artifacts in ways that standard static displays cannot. Augmented reality works by superimposing digital information over genuine settings. Augmented reality systems can recreate a shattered sculpture or provide historical facts immediately within the museum environment. Users can remotely tour heritage places using virtual reality, which provides fully immersive experiences. These experiences include virtual tours of archaeological sites and reproduced historical settings. According to Paolanti et al. (2023), these tools are especially valuable for educational reasons since they make history more accessible and relevant to younger audiences. Advances in digital technology have resulted in increased public contact and participation. Virtual museums and online exhibits, which became popular during the COVID-19 pandemic, provide places for people all over the world to view cultural material. In addition to encouraging crowd-sourced contributions, these programs democratize knowledge by making it easier for citizens to archive material and conduct collective historical research. Despite their potential to bring about profound transformations, digital technologies face implementation hurdles. These challenges include high costs, a need for skilled labor, and the possibility of technical obsolescence. To ensure the long-term survival and inclusion of digital museology, it is vital to participate in strategic planning and funding to address these challenges. Pioli (2024).

As a reflection of society's aspirations toward inclusivity, equity, and historical accountability, ethical considerations in cultural heritage preservation have gained in importance. Repatriation of

antiquities to their original countries is a strongly disputed topic in the field of ethical museology. It has been urged that various objects housed in museum collections be returned to their original owners because they were obtained through colonial or exploitative means. Repatriation not only corrects historical injustices, but also allows source communities to regain their cultural identity and leave a legacy for themselves. Because of the complexities of these processes, which generally involve legal, political, and logistical constraints, participants must engage in serious discourse and collaboration (Hutson, 2024).

Decolonization of museum collections extends beyond repatriation to address fundamental biases in the portrayal of cultures and histories. Throughout its history, traditional museology has frequently supported Western narratives, so marginalizing or misrepresenting indigenous and non-Western perspectives. Ethical museology promotes the incorporation of a variety of perspectives, ensuring that legacy is interpreted in ways that reflect the communities it represents. This transformation necessitates changes to curatorial methodologies as well as the introduction of participation strategies in which locals actively participate in decision-making about their cultural items (Barbudo Carrasco, 2024). Other important improvements include the implementation of participative approaches. To add insult to injury, ethical considerations include the methods and resources used in conservation efforts. When artifact restoration entails the use of invasive techniques or chemicals that may be hazardous to the environment, concerns arise concerning the long-term effects of these procedures and substances on both the artefacts and the environment. Ethical norms stress openness, sustainability, and appreciation for artifacts' cultural and historical importance. Through the application of these concepts, museums and historical institutions may create trust and collaboration with the communities they serve. According to Žuvela et al. (2023), conservation measures should fit with broader social and cultural values.

The growing realization of environmental and resource constraints is mirrored in the fact that sustainability has emerged as a critical element in the preservation of cultural assets. Sustainable approaches strive to reduce the negative environmental impact of preservation activities while simultaneously guaranteeing that heritage assets remain valuable for future generations. By incorporating renewable energy sources into its operations, the museum can minimize its dependency on fossil fuels and lower its greenhouse gas emissions. Examples of such sources are solar and wind energy. In a similar vein, sustainable materials, such as biodegradable packaging and storage options, are gradually replacing old alternatives that require significant resources (Kullert et al., 2024). One of the most essential components of sustainability in museology is the integration of conservation efforts with long-term environmental goals. Visitors are encouraged to interact with heritage sites through the adoption of sustainable tourism programs, which preserve the monuments' originality. Implementing techniques such as restricted visitor access, eco-tourism initiatives, and community-based heritage management can help to preserve cultural and natural resources for future generations. These strategies are consistent with international frameworks such as the United Nations Sustainable Development Goals, which emphasize the link between cultural heritage and sustainable development (Magliacani, 2023). Despite these developments, major hurdles remain in implementing sustainable practices in the field of heritage protection. Many firms lack the financial resources and technical skills needed to implement environmentally friendly technologies or build complete sustainability strategies. Furthermore, in order to balance conservation goals with environmental concerns, trade-offs are typically required. One example is the demand for climate control systems, which use a lot of energy to protect fragile antiques. To solve these difficulties, it is vital to develop novel solutions, participate in intersectoral cooperation, and enhance investments in capacity-building initiatives. This will allow historical organizations to take a more sustainable strategy (Pilar, 2023).

## 5.0 Conclusion

The development of technology, ethical concerns, and the need to meet sustainability standards are all factors that are causing significant shifts in the field of museology and the preservation of cultural property. The findings of this study highlight the importance of diverse collaborations in order to address new problems and highlight the improvements that have been made in a variety of fields. The preservation of cultural legacy for future generations is a crucial role that may be maintained by museology through the incorporation of modern technologies, the encouragement of community involvement, and the application of policies that are environmentally responsible. The employment of digital technologies in the field of museology has transformed preservation procedures and increased public interaction. Researchers and the general public can now interact with cultural items in unique ways thanks to the development of virtual reproductions, which were made possible by combining 3D scanning and augmented reality technology.

**References**


1. Ahmad, M., Peng, T., Awan, A., & Ahmed, Z. (2023). Policy framework considering resource curse, renewable energy transition, and institutional issues: Fostering sustainable development and sustainable natural resource consumption practices. *Resources Policy*, *86*, 104173. https://doi.org/10.1016/j.resourpol.2023.104173
2. Ajayi, F. A., & Udeh, C. A. (2024). REVIEW OF WORKFORCE UPSKILLING INITIATIVES FOR EMERGING TECHNOLOGIES IN IT. *International Journal of Management & Entrepreneurship Research*, *6*(4), Article 4. https://doi.org/10.51594/ijmer.v6i4.1003
3. Barbudo Carrasco, L. (2024). *The Potential of Strategic Communication for Co-creating Decolonial Narratives in Museums: Bridging Conceptual Depth with Practical Application*. https://urn.kb.se/resolve?urn=urn:nbn:se:miun:diva-52116
4. Chelazzi, D., Poggi, G., & Baglioni, P. (2024). The GREENART Project: Environmentally Friendly and Low Impact Materials for the Conservation of Cultural Heritage. *Studies in Conservation*, *69*(sup1), 25–34. https://doi.org/10.1080/00393630.2024.2342656
5. Cornish, F., Breton, N., Moreno-Tabarez, U., Delgado, J., Rua, M., de-Graft Aikins, A., & Hodgetts, D. (2023). Participatory action research. *Nature Reviews Methods Primers*, *3*(1), 1–14. https://doi.org/10.1038/s43586-023-00214-1
6. Griffith, D. M., Efird, C. R., Baskin, M. L., Hooper, M. W., Davis, R. E., & Resnicow, K. (2024). Cultural Sensitivity and Cultural Tailoring: Lessons Learned and Refinements After Two Decades of Incorporating Culture in Health Communication Research. *Annual Review of Public Health*, *45*(Volume 45, 2024), 195–212. https://doi.org/10.1146/annurev-publhealth-060722-031158
7. Hutson, J. (2024). Digital Cultural Heritage Preservation. In J. Hutson (Ed.), *Art and Culture in the Multiverse of Metaverses: Immersion, Presence, and Interactivity in the Digital Age* (pp. 99–141). Springer Nature Switzerland. https://doi.org/10.1007/978-3-031-66320-8_4
8. Kühlert, M., Klingen, J., Gröne, K., Hennes, L., Terrapon-Pfaff, J. C., & Jamea, E. M. (2024). *Pathways towards a green economy in Egypt: Analyzing decarbonization and resource efficiency pathways along value chains to support green private sector development in Egypt*. https://doi.org/10.48506/opus-8534
9. Luli, E. (2023). *Preserving Cultural Values: Building Bridges of Heritage, Culture for Acceptance, and Sharing, in Southeast Europe*.
10. Magliacani, M. (2023). How the sustainable development goals challenge public management. Action research on the cultural heritage of an Italian smart city. *Journal of Management and Governance*, *27*(3), 987–1015. https://doi.org/10.1007/s10997-022-09652-7

11. Maiko, S., & Frederic, A. (2024). *Impacts of Museums on Global Communication*. IGI Global.

12. Nguyen, C. D. (2024). Digital cultural heritage in the crossfire of conflict: Cyber threats and cybersecurity perspectives. *Insights*, *37*(1). https://doi.org/10.1629/uksg.647

13. Novak, M., Grau-Bove, J., De Stefani, C., Checkley-Scott, C., Kraševec, I., Cigić, I. K., & Elnaggar, A. (2024). Evaluation and modelling of the environmental performance of archival boxes, part 1: Material and environmental assessment. *Heritage Science*, *12*(1), 24. https://doi.org/10.1186/s40494-024-01137-0

14. Paolanti, M., Puggioni, M., Frontoni, E., Giannandrea, L., & Pierdicca, R. (2023). Evaluating Learning Outcomes of Virtual Reality Applications in Education: A Proposal for Digital Cultural Heritage. *J. Comput. Cult. Herit.*, *16*(2), 36:1-36:25. https://doi.org/10.1145/3593432

15. Pilar, P. (2023). *Policy capacity mechanisms for addressing complex, place-based sustainability challenges*.

16. Pioli, M. <2000>. (2024). *Museums of the future: Digitalisation as a new form of communication*. http://dspace.unive.it/handle/10579/26621

17. Singh, A. B., Khandelwal, C., & Dangayach, G. S. (2024). Revolutionizing healthcare materials: Innovations in processing, advancements, and challenges for enhanced medical device integration and performance. *Journal of Micromanufacturing*, 25165984241256234. https://doi.org/10.1177/25165984241256234

18. Wagner, A., & de Clippele, M.-S. (2023). Safeguarding Cultural Heritage in the Digital Era – A Critical Challenge. *International Journal for the Semiotics of Law - Revue Internationale de Sémiotique Juridique*, *36*(5), 1915–1923. https://doi.org/10.1007/s11196-023-10040-z

19. Žuvela, A., Šveb Dragija, M., & Jelinčić, D. A. (2023). Partnerships in Heritage Governance and Management: Review Study of Public–Civil, Public–Private and Public–Private–Community Partnerships. *Heritage*, *6*(10), Article 10. https://doi.org/10.3390/heritage6100358