West Science Interdisciplinary Studies
Vol. 4, No. 07, July 2026: pp. 1186-1194

Cultural Preservation Research: A Bibliometric Review

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ABSTRACT

Cultural preservation has become an increasingly important research area due to growing challenges associated with globalization, environmental change, technological transformation, and the degradation of cultural heritage assets. This study aims to examine the development, intellectual structure, and emerging research trends in cultural preservation through a bibliometric analysis approach. Data were collected from a scientific database and analyzed using bibliometric techniques, including performance analysis, keyword co-occurrence analysis, citation analysis, density visualization, and collaboration network analysis. The findings reveal that cultural preservation research has developed into an interdisciplinary field connecting heritage conservation, archaeology, architecture, tourism, sustainability, and digital technologies. The keyword analysis indicates that cultural heritage and historic preservation are the dominant themes, while emerging topics such as virtual reality, three-dimensional computer graphics, photogrammetry, sustainable development, and risk assessment reflect the increasing adoption of innovative preservation strategies. Citation analysis identifies influential studies focusing on digital documentation, heritage recording, climate change impacts, and immersive heritage experiences. Furthermore, collaboration analysis demonstrates the existence of international research networks, with countries such as the United States, Italy, Spain, France, and China playing important roles in advancing cultural preservation scholarship. This study contributes to a deeper understanding of the evolution of cultural preservation research and highlights future opportunities for integrating digital innovation, sustainability principles, and collaborative approaches to strengthen global heritage protection.

Keywords: *Cultural Preservation, Cultural Heritage, Historic Preservation, Bibliometric Analysis, VOSviewer, Scopus*

1. INTRODUCTION

The cultural heritage is the shared memory and identity of any culture that involves both material objects and immaterial culture passed down from generation to generation [1], [2]. As we move towards globalization, cultural aspects have become highly vulnerable to the impacts of homogenizing factors like media, tourism, and urbanization [3]. Therefore, the preservation of culture has become a highly important area of study for academics and policy makers in the present times [4], [5].

There has been an increase in academic research on cultural preservation within the past few decades with contributions from different fields of study such as anthropology, sociology, history, and museology [6]. Various methods for preserving both material elements of culture, for example, architecture and artifacts, and immaterial expressions of culture, such as language, rites, and performance arts have been developed by scholars [7]. The introduction of digital technologies such as databases, virtual archives, and social media sites has offered novel approaches to documenting and disseminating information on cultural traditions [8]. However, there is still room for improving the process of cultural preservation by making it more participatory, context-sensitive, and inclusive of marginal groups whose cultures are more vulnerable [9].

The use of bibliometrics in the examination of research disciplines is increasingly becoming popular since it helps in the understanding of the development and trends in the research discipline in question. Through the study of publication trends, citations and co-wordings, bibliometric studies offer an objective view of the structure of knowledge in any particular research domain by pointing out the key authors, important articles as well as research directions [10]. In the research discipline

of cultural preservation, bibliometric methods are helpful in helping researchers to identify the gaps in the existing literature, identify less examined cultures, and determine future research directions.

Indeed, the issue of cultural preservation not only belongs to the realm of academics but also to the realm of society where it has practical consequences for sustainable development. Cultural preservation is helpful in promoting social solidarity, knowledge transfer between generations and economic development through cultural tourism and creative industries [11]. In addition, it is used as an instrument of promoting identity and resilience for the communities undergoing globalization-related transformations. Efforts in terms of policy, laws and financing aimed at encouraging heritage preservation have been made by governments, international bodies and NGOs, although they vary in their efficiency and academic recognition [12].

Even though the significance of cultural preservation is widely acknowledged, modern-day scientific research encounters obstacles when trying to combine information from different fields and from various parts of the world. Differences in terms of diversity of sources, methodology used, terminology applied, and other factors make the formulation of appropriate approaches to the protection of heritage rather complicated [13]. In addition, the quick development of technologies used requires a constant reevaluation of the priorities of scientific research since they change the understanding of cultural heritage as an object to preserve [14].

Although many studies have been conducted in cultural preservation, there is still a deficiency in terms of consolidated understanding of research trends, key players in the field, and major themes. As a result of disparate studies conducted using different methodologies and perspectives, the existing knowledge base has not allowed for identifying key research themes, new directions in research, and gaps in the literature that should be taken into account in developing evidence-based preservation strategies. As a result, there are potential risks for policymakers, researchers, and other stakeholders to miss some chances of using the results of past studies in their activities, resulting in duplication of research and ineffective management of heritage (Bertacchini et al., 2012).

2. METHODS

In this research, a bibliometric review is used as a research method to analyze trends in the field of cultural preservation. Through bibliometric analysis, literature published on a particular topic can be assessed quantitatively based on indicators like publication count, authors, citation network, and keyword occurrence [10]. It is especially beneficial in analyzing research fields that are interdisciplinary and spread out in various journals and subjects. Such bibliometric analysis gives objective insight into the intellectual structure of the field, thus identifying prominent authors, journals, emerging themes, and possible gaps in literature.

For this bibliometric review, data were retrieved from Scopus, a well-known repository for scholarly literature [10]. Keywords included in the literature search comprised terms such as "cultural preservation," "heritage conservation," and "intangible cultural heritage." Only peer-reviewed journal articles were included, which appeared in scientific literature between the years 2000 and 2026, written in the English language and belonging to fields of social science, arts, and humanities. Literature on topics other than cultural preservation, including technical heritage application and other environmental literature, were omitted from the database. Data from this literature review were downloaded in a CSV file, consisting of metadata such as author information, affiliations, year of publication, journal, citations, and keywords.

Bibliometric mapping and visualization was performed using VOSviewer [15], a software application intended for creating and visualizing bibliometric networks. VOSviewer was employed

for generating networks of co-authorships, co-citations, and maps of keywords co-occurrences in order to find research clusters, key authors, and thematic patterns. Some thresholds for building networks, such as minimal number of citations by one author and minimal frequency of keywords usage, were established in order to provide more clear and focused visualization. Results obtained using VOSviewer were analyzed in the context of cultural preservation research, allowing to draw conclusions about development, trends, and literature gaps in the field, thus defining new research directions.

3. RESULT AND DISCUSSION

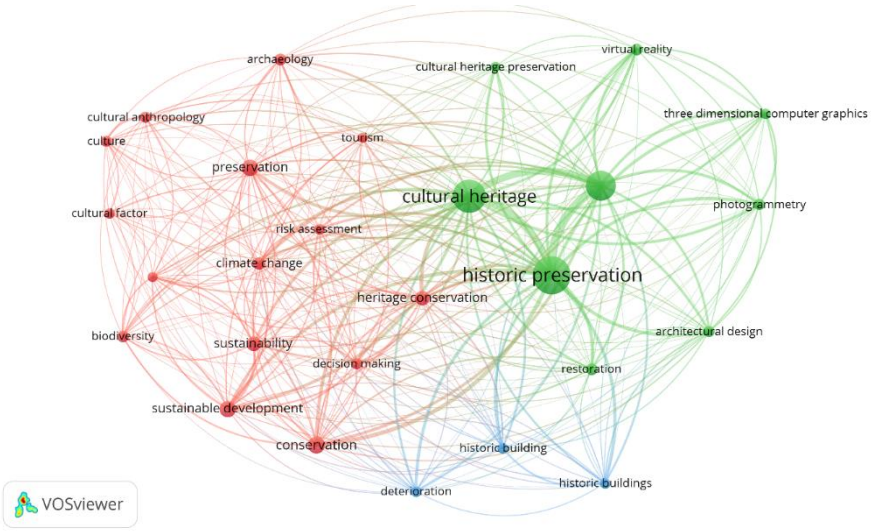

Figure 1. Network Visualization
Source: Data Analysis Result, 2026

The intellectual structure and thematic relations between different terms in the field of cultural preservation are shown in Figure 1. The map produced using VOSviewer shows that cultural preservation consists of several clusters that are interrelated, and that cultural preservation is indeed a multidisciplinary area that includes heritage studies, conservation science, archaeology, tourism, sustainability, and information technologies. The bigger the node is, the more often the keyword occurs. The connecting lines show the strength of connections between keywords. The central location of the node "cultural heritage" indicates its significance as a key notion that unites many perspectives, and "historic preservation" is also a prominent term related to protecting and managing historic resources.

Green cluster is mainly focused on technology and architecture elements of cultural preservation. Cultural heritage, preservation, virtual reality, 3D computer graphics, photogrammetry, architectural design and restoration are among the keywords that reveal an increasing attention of scholars towards the use of digital technologies for the preservation of heritage. These keywords suggest that green cluster is related to the transformation of traditional methods of preservation towards the application of digital technologies in this field. The appearance of virtual reality and 3D modeling technologies reveals that modern research pays more attention to new ways of preservation of cultural resources. The red cluster encompasses the social, environmental, and sustainability facets of cultural preservation. The keyword list includes cultural anthropology, culture, tourism, sustainable development, sustainability, climate change, biodiversity, risk assessment, and conservation to indicate that preservation research is not simply about safeguarding the physical entity but rather encompasses other facets such as cultural identity, community involvement, environmental issues, and sustainability.

The blue cluster is associated with history-related buildings, deterioration process, and conservation process. Since there are keywords like historic buildings, historic building,

deterioration, restoration, and conservation in the cluster, it shows that the research has been done on the physical preservation and restoration of heritage sites. It shows that a large amount of research done on cultural preservation deals with the study of structural condition assessment, degradation prevention, and restoration process. Overall, the network shows the development of cultural preservation research from the conventional method of conservation to an integrated method of cultural preservation.

3.1 Overlay Visualization

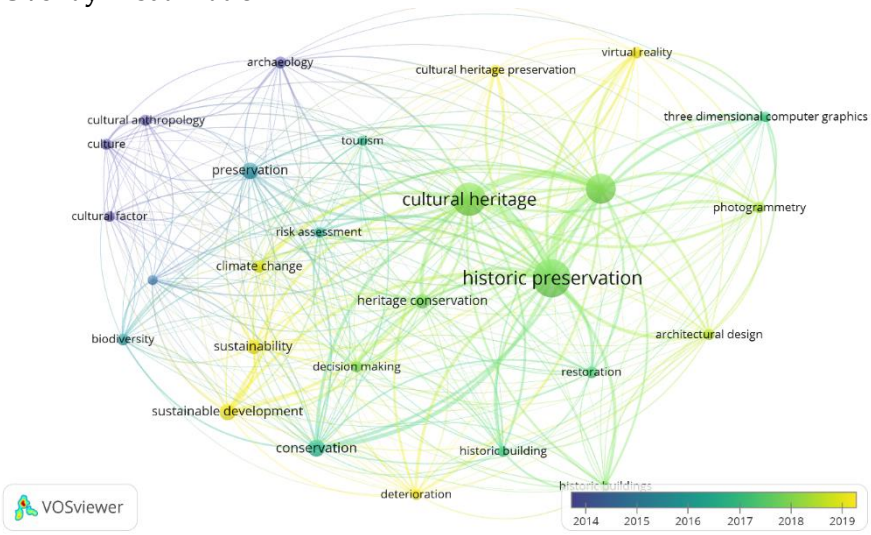

Figure 2. Overlay Visualization
Source: Data Analysis Result, 2026

Figure 2 illustrates the timeline of cultural preservation studies through the use of the average publication date of relevant keywords. The timeline of colors is used to show how research topics have evolved, where blue denotes early research topics (2014), green denotes middle-term research topics (2016-2017), and yellow denotes later research topics (2018-2019). It is clear from Figure 2 that cultural heritage and historic preservation have continued to be the major research topics. Based on earlier research trends, which include keywords like "cultural anthropology," "culture," "archaeology," "cultural factor," and "historic buildings" presented in blue colors, it can be argued that earlier research efforts on culture preservation were based on history and society-related approaches. In particular, the focus was on the study of cultural values, history, and identity. At the same time, topics like historic buildings, deterioration, and restoration suggest an early interest in physical conservation efforts.

Some of the latest research areas which are denoted through the use of yellow color as keywords including "virtual reality," "three-dimensional computer graphics," "sustainable development," "risk assessment," and "decision making" reflect new directions in which research on cultural heritage preservation is being done. The trend towards use of new technology and sustainable concepts is now reflected in various current researches on cultural preservation. The presence of these latest trends reveals that cultural preservation research is no longer about mere preservation but also involves technological innovation and environmental sustainability.

3.2 Citation Analysis

Table 1. The Most Impactful Literatures

Citations	Authors and year	Title
1260	[16]	American Cancer Society guidelines on nutrition and physical activity for cancer prevention: Reducing the Risk of Cancer with Healthy Food Choices and Physical Activity

Citations	Authors and year	Title
834	[17]	Heritage recording and 3D modeling with photogrammetry and 3D scanning
470	[18]	Environmental, health, wellbeing, social and equity effects of urban green space interventions: A meta-narrative evidence synthesis
458	[19]	Microbial deterioration of cultural heritage and works of art - Tilting at windmills?
353	[20]	Satellite remote sensing for archaeology
348	[21]	Augmented Reality in Cultural Heritage: An Overview of the Last Decade of Applications
336	[22]	Absence of the lactase-persistence-associated allele in early Neolithic Europeans
331	[23]	Management of immersive heritage tourism experiencs: A conceptual model
331	[24]	Are cultural heritage and resources threatened by climate change? A systematic literature review
324	[25]	Menstruation: science and society

Source: Scopus, 2026

The most influential literature in the sphere of cultural preservation research based on citation frequency is provided in Table 1 below. As it can be seen from the results, the structure of knowledge in this sphere is quite interdisciplinary, involving heritage conservation, digital technology, sustainability of the environment, archaeology, tourism, and social science perspectives. The most cited work by [16] with 1,260 citations is oriented toward the health-related guidelines, which means that some of the most influential papers are associated not only with conventional heritage but also with the issues of sustainability and human well-being. However, one of the most influential publications that is directly associated with cultural preservation research using heritage recording, photogrammetry, and 3D modeling is provided by [17] with 834 citations. There are other influential papers emphasizing the technological innovation, namely satellite remote sensing for archaeology [20] and the application of augmented reality in cultural heritage [21]. Moreover, there are a lot of papers focusing on environmental challenges, such as the deterioration of cultural heritage by microbes [19] and the threat of climate change to heritage resources [26].

3.3 Density Visualization

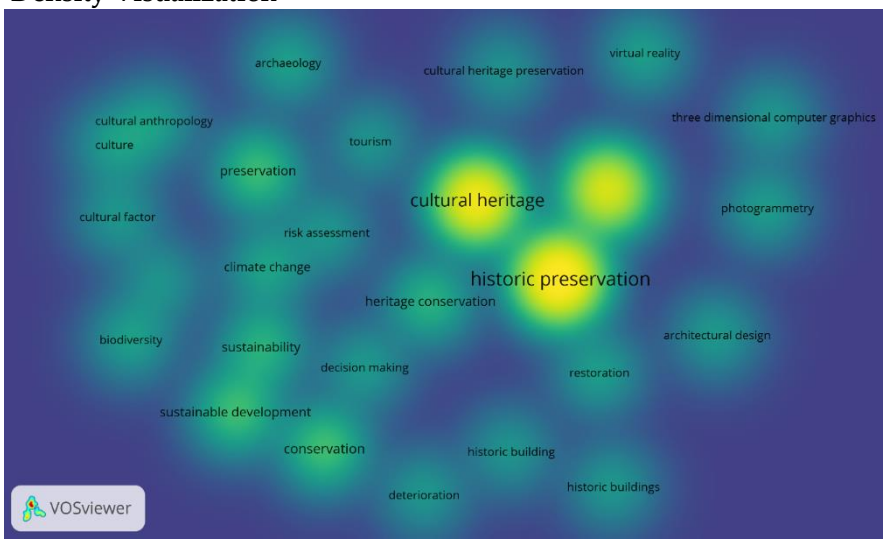

Figure 3. Density Visualization
Source: Data Analysis Result, 2026

Figure 3 shows the density and intensity of the research themes in the area of cultural preservation through keyword frequency and association. The denser themes are denoted by bright yellow circles, especially around the keywords "cultural heritage" and "historic preservation," which proves that the main focus of research themes in this field is centered around these themes. This is because these main themes are highly associated with other themes such as heritage conservation, restoration, historic architecture, and architectural design, thereby proving that a considerable number of studies are based on the preservation and management of tangible cultural assets. In addition to the primary themes mentioned above, the visualization further highlights some other growing and complementary areas of research with lower but still high relevance, namely digital technologies, sustainability, and the environment. The terms like virtual reality, three-dimensional computer graphics, and photogrammetry emphasize the growing importance of the application of new technology in heritage documentation, visualization, and preservation. As for the sustainable development, climate change, risk assessment, and biodiversity, they demonstrate the shift of the contemporary cultural preservation towards the environmentally sound and flexible approaches.

3.4 Co-Authorship Analysis

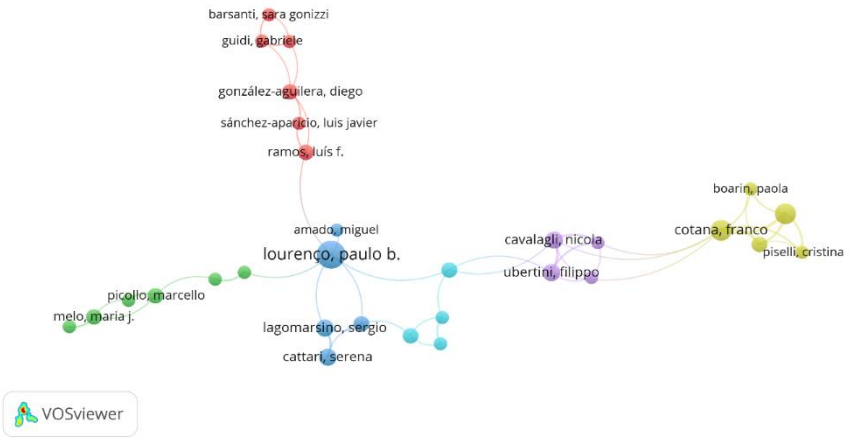

Figure 4. Author Visualization
Source: Data Analysis Result, 2026

Figure 4 depicts the knowledge links and collaborations present in the domain of cultural preservation research. From the graph, it can be seen that there are several well-defined collaboration clusters, indicating that research activities are performed by quite specialized academic communities. The biggest and the most connected cluster involves Lourenço, Paulo B., who has strong connections with authors like Lagomarsino, Sergio, Cattari, Serena, and Amado, Miguel, which indicates significant research activity in the field of heritage preservation, structure evaluation, and preservation of old buildings. There are other clusters, like the one involving Cotana, Franco, Bisenli, Cristina, and Boarin, Paola, that indicate the collaboration networks in the field of architectural heritage and sustainable building preservation. There are also smaller clusters that involve researchers like González-Aguilera, Diego, Sánchez-Aparicio, Luis Javier, and Ramos, Luis F.

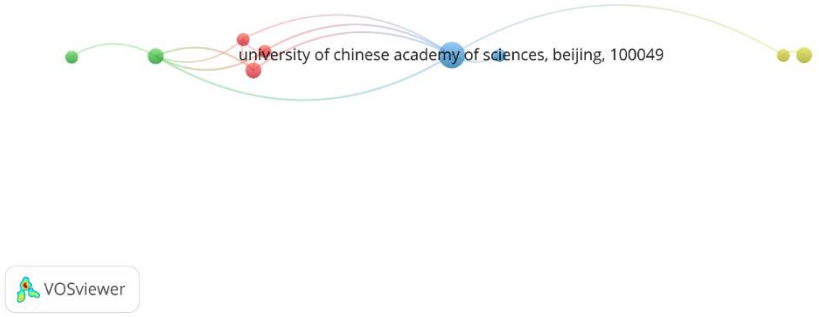

Figure 5. Institution Visualization

Source: Data Analysis Result, 2026

As can be seen in Figure 5, there is a visualization of the connections between various organizations involved in cultural preservation research. It can be observed from Figure 5 that the University of Chinese Academy of Sciences, Beijing is the most prominent institution involved in this area of research, since it is represented by a bigger node in the map and it has a lot of connections to other institutions. It means that it acts as a center for coordination and conducting research in this area. Moreover, there are several clusters with different colors in this map, which means that there are a few collaboration groups, however, the network is not very big in terms of the number of connections. In addition, the presence of connections between the institutions means that cultural preservation research is conducted through collaboration on the international level and in several fields of study.

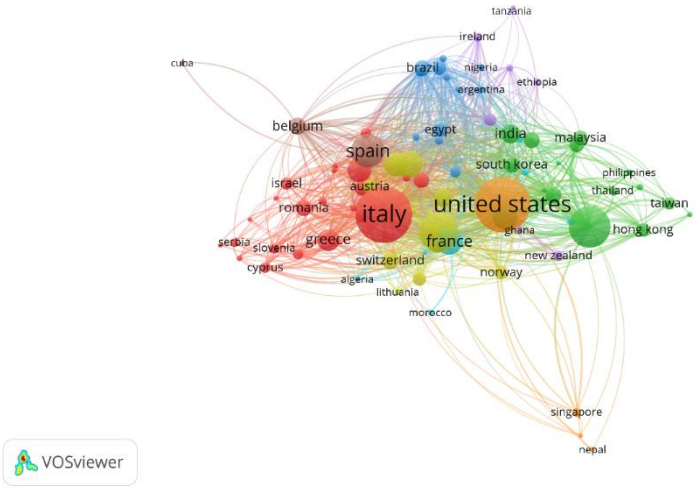

Figure 6. Country Visualization
Source: Data Analysis Result, 2026

Figure 6 emphasizes the geographical pattern of distribution and international collaboration of cultural preservation research. From Figure 6, the United States emerges as the country contributing the most and thus acting as the most central country in the field, indicated by the large size of the node and connections with other countries, implying a substantial contribution to the collaborative research internationally. Some other countries having large number of connections, including Italy, Spain, France, China, India, and Malaysia, contribute heavily to the international cultural heritage research through regional and international collaboration. Some collaboration communities have emerged in the network, where European countries like Italy, Spain, Greece, Austria, and Belgium, among others, have emerged as a strong research community working in the field of heritage conservation, architecture, and history, while Asian countries like China, India, Malaysia, Thailand, and South Korea have been increasingly active in the field of cultural heritage management and digital preservation.

CONCLUSION

Through this bibliometric analysis, a detailed account on the evolution, intellectual structure, and the emerging trends in cultural preservation research will be provided. It can be seen that cultural preservation has shifted its traditional emphasis on conservation and protection towards a wider and more interdisciplinary field which includes various new dimensions like digital technology, sustainability, environmental management, tourism, and community-based preservation. It is seen through the keywords used in the study that cultural heritage and historic preservation are the most dominant areas of research, and new trends including virtual reality, 3D modeling, photogrammetry, risk assessment, and sustainable development signify the trend towards innovative approaches. Through citation analysis, it is found that a strong impact of literature on digital documentation, heritage conservation, climate change, and immersive heritage experiences exists in preservation practices. Moreover, in terms of collaboration analyses, it is evident that cultural preservation research involves the presence of an international network including prominent nations, institutes, and authors, and countries like the United States, Italy, Spain, France, and various Asian nations are the most influential contributors.

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