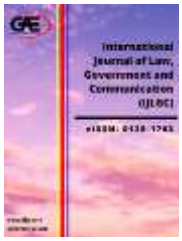
International Journal of Law, Government and Communication
EISSN : 0128-1763
Volume: 11 Issue: 43 (March 2026) PP. 495-514



INTERNATIONAL JOURNAL OF LAW, GOVERNMENT AND COMMUNICATION (IJLGC)
www.gaexcellence.com/ijlgc

RESEARCH TRAJECTORY ANALYSIS OF CULTURAL HERITAGE SOCIAL MEDIA COMMUNICATION BASED ON KNOWLEDGE GRAPHS

Wang Xiaojing[1], Balamuralithara Balakrishnan[2*]

[1]Department of Multimedia Creative, Faculty of Art and Industry Creative, Universiti Pendidikan Sultan Idris, Tanjong Malim, Perak, Malaysia.
592245933@qq.com https://orcid.org/0009-0002-2390-550X
[2]Department of Multimedia Creative, Faculty of Art and Industry Creative, Universiti Pendidikan Sultan Idris, Tanjong Malim, Perak, Malaysia.
balab@fskik.upsi.edu.my https://orcid.org/0000-0002-4496-5125
[*]Corresponding Author

Article Info:

Article history:
Received date: 20.01.2026
Revised date: 16.02.2026
Accepted date: 18.03.2026
Published date: 30.03.2026

To cite this document:

Wang, X., & Balakrishnan, B. (2026). Research Trajectory Analysis of Cultural Heritage Social Media Communication Based on Knowledge Graphs. *International Journal of Law, Government and Communication, 11*(43), 495-514.

Abstract:

With the development of digital technologies and the widespread adoption of social media platforms, the modes of cultural heritage dissemination have continuously evolved. In recent years, studies on digital communication of cultural heritage and its application on social media have increased. Many existing studies focus on case analyses or single disciplinary perspectives, while systematic bibliometric synthesis remains limited. In addition, relevant research is distributed across several disciplines, including communication studies, heritage studies, and information science. This distribution has produced a fragmented body of literature and has limited a comprehensive understanding of research trends and thematic evolution in this field. In response, this study applies a bibliometric approach to conduct a systematic analysis of research on cultural heritage dissemination through social media. The data were collected from the Web of Science Core Collection, including 436 publications published between 2020 and 2025. Using CiteSpace and VOSviewer, citation analysis, keyword co-occurrence analysis, and academic network visualization were employed to examine the disciplinary distribution, thematic clusters, and research frontiers of the field. The results indicate that current research mainly focuses on two aspects: the mechanisms of digital dissemination of cultural heritage, such as platform communication strategies, algorithmic visibility, and narrative expression; and user participation in social media environments, including user interaction, co-creation, and digital heritage communities. The findings contribute to clarifying the

International Journal of Law, Government and Communication
EISSN : 0128-1763
Volume: 11 Issue: 43 (March 2026) PP. 495-514

knowledge structure and development trends of this field and provide directions for future research.

DOI: 10.35631/IJLGC.1143032 **Keyword:**

Bibliometric Visualization; Cultural Heritage; Knowledge Graph; Keyword Co-occurrence Relationships; Social Media

Introduction

With the rapid advancement of contemporary digital technologies, particularly the widespread adoption of social media platforms, the dissemination ecology and presentation forms of cultural heritage are being reshaped（Liang, X., Lu, Y., & Martin, J,2021). The improvement of mobile internet infrastructure enables cultural heritage information to reach global audiences with unprecedented speed and breadth. Smart terminal devices have gradually evolved into the primary medium through which the public perceives and experiences cultural heritage, overcoming the temporal and spatial limitations of traditional cultural heritage dissemination (Liang, X., Lu, Y., & Martin, J,2021). Within the context of deepening digital transformation and increasing cross-cultural exchange, social media platforms provide new technological pathways for the protection, transmission, and revitalization of cultural heritage. This technology-driven dissemination model has transformed the ways heritage information is presented and has facilitated the shift of the public role from passive receivers to active participants (Liang, 2022).

Therefore, systematically examining the development trajectory, core issues, and future directions of research on cultural heritage communication through social media is of great significance for enriching the theoretical framework of cultural heritage protection and guiding heritage management practices. Bibliometrics, as an interdisciplinary field that applies mathematical and statistical methods to the quantitative analysis of academic literature, can objectively reveal the knowledge structure and development trajectory of a specific research field through the systematic analysis of literature distribution characteristics, citation relationships, and thematic evolution (Lian & Xie, 2024).

This study focuses on academic literature in the field of cultural heritage communication on social media and addresses the following research questions through bibliometric analysis methods:

International Journal of Law, Government and Communication
EISSN : 0128-1763
Volume: 11 Issue: 43 (March 2026) PP. 495-514

1.To conduct a quantitative analysis of research articles published between 2021 and 2025, covering data related to authors, journals, and countries, in order to identify influential authors, institutions, key publications, and highly cited papers, and to analyze patterns of international collaboration.
2.To systematically review the core research hotspots in the field of cultural heritage communication on social media, to examine the evolution patterns of research themes across different development stages, and to identify emerging trends in this field.

Methodology

Data Collection

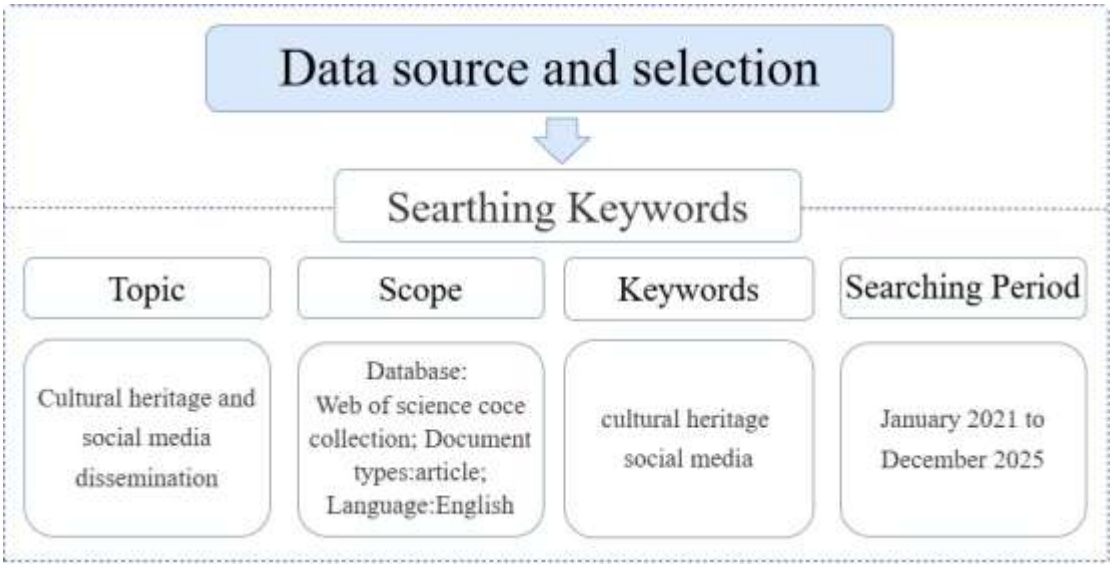


Fig 1. Data Source and Selection

The research data used in this study were obtained from the Web of Science Core Collection. As an internationally recognized high-quality academic literature retrieval platform, this database integrates authoritative academic resources across multiple disciplines and is widely used in literature tracking, academic evaluation, and bibliometric analysis research (Clarivate Analytics, 2024). To ensure a high level of relevance between the retrieved literature and the research topic, a rigorous search strategy was developed in this study.

Although the digital exploration of cultural heritage has a relatively long research history, academic discussions specifically focusing on the influence of social media platforms on heritage dissemination have mainly concentrated within the past decade. Based on this context, the literature retrieval for this study was conducted in January 2025. The search time span was set from 1 January 2020 to 31 December 2025 (East China Normal University Library, 2024).

International Journal of Law, Government and Communication
EISSN : 0128-1763
Volume: 11 Issue: 43 (March 2026) PP. 495-514

Data Cleaning

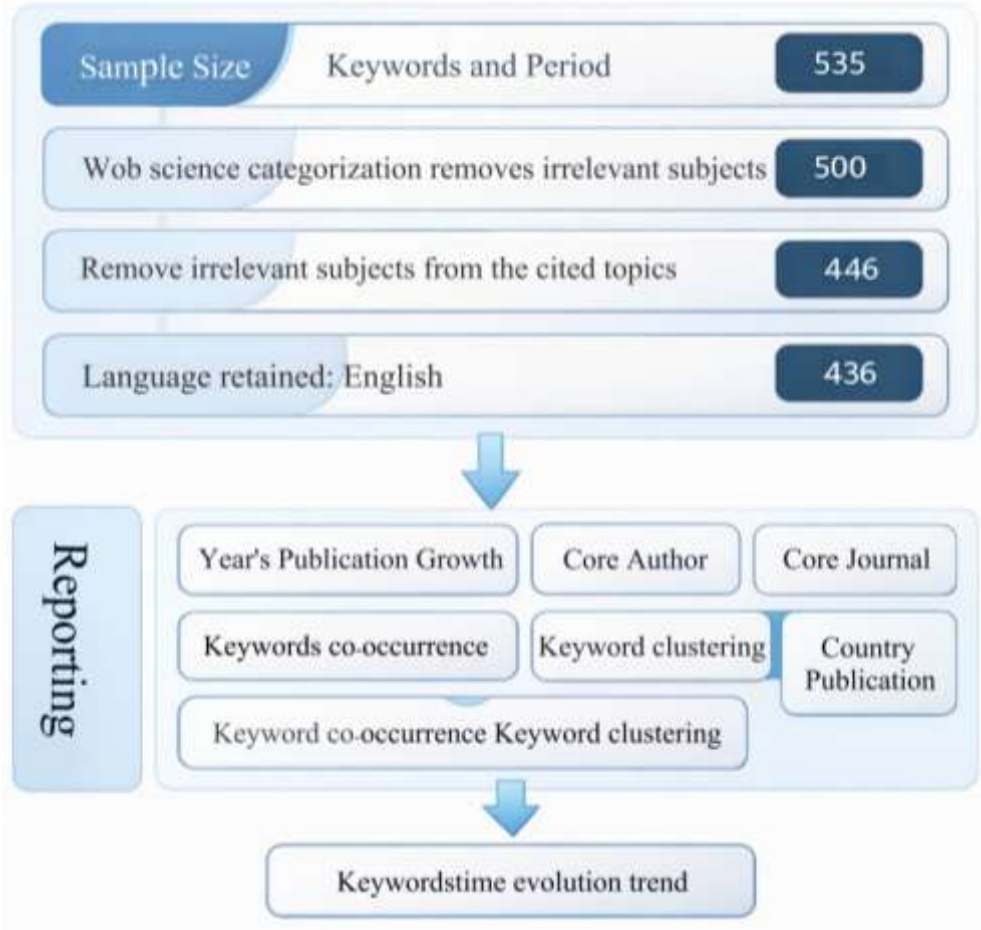


Fig 2. Data Cleaning and Reporting

The data used in this study were obtained from the Web of Science Core Collection database. To ensure the relevance between the retrieved literature and the research topic, a systematic literature screening procedure was designed. The search strategy adopted a topic-based keyword combination approach. The specific search query was TS= (cultural heritage) AND TS=(social media), which initially yielded 535 publications.

Using the Web of Science subject category classification system, publications from disciplinary fields that were not directly related to cultural heritage communication research were excluded, resulting in 500 publications. Further screening was conducted using the citation topic function to remove publications outside the core research domain, resulting in 446 publications. Considering that English is the primary language of international academic communication, the language was restricted to English, which resulted in a final dataset of 436 valid publications.

Research on cultural heritage communication through social media demonstrates significant interdisciplinary characteristics, involving multiple academic fields such as heritage conservation studies, communication studies, and information technology. In the literature screening process, this study clearly defined disciplinary boundaries. Priority was given to publications examining cultural heritage from the perspectives of cultural communication and heritage management. Studies focusing solely on technical development or platform

International Journal of Law, Government and Communication
EISSN : 0128-1763
Volume: 11 Issue: 43 (March 2026) PP. 495-514

architecture design were excluded. Publications involving digital technology or social media platforms but lacking empirical research or theoretical analysis related to cultural heritage communication were also excluded. This screening standard helped maintain a clear research focus and improved data quality and analytical reliability.

The standardization of bibliographic data was conducted using Excel and CiteSpace software. Author names and institutional names were standardized to eliminate duplicate counts caused by spelling variations or translation differences. Synonymous keywords were integrated, such as classifying heritage preservation and heritage conservation under a unified category. Duplicate records were identified and removed to ensure the uniqueness of each publication. After these procedures, the final research sample consisted of 436 publications.

Results

This study employs CiteSpace and VOSviewer software to conduct bibliometric analysis of the literature data. CiteSpace is capable of revealing the knowledge structure and evolutionary trends of a research field through methods such as co-citation analysis and cluster analysis (Du et al., 2024). VOSviewer, in contrast, is particularly effective in constructing keyword co-occurrence networks, analyzing author collaboration relationships, and visualizing citation networks, which helps identify core research themes and the characteristics of academic communities within a research field (Singapore Management University Library, 2022).

The combined use of these two software tools enables the knowledge graph of cultural heritage communication on social media to be presented from multiple analytical dimensions.

Descriptive Statistics

The 436 publications analyzed in this study were contributed by 1,399 authors affiliated with 715 institutions across 75 countries and were published in 191 academic journals. These publications collectively cited 25,292 references originating from 13,338 different journals.

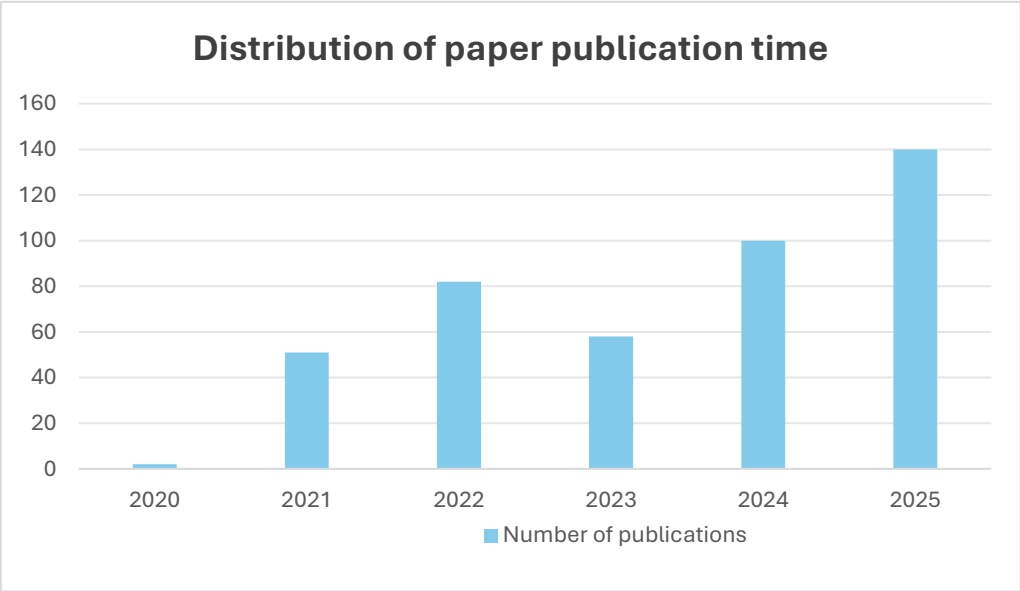


Fig 3. Distribution Of Paper Publication Time

International Journal of Law, Government and Communication
EISSN : 0128-1763
Volume: 11 Issue: 43 (March 2026) PP. 495-514

Bibliometric Analysis of the Authors

Table 1: Displays High-productivity Authors More Than Four Publications

NO	Author	Documents	Citations	Average Citation/Publication
1	Chen, Yile	4	29	7.25
2	Daga, Enrico	3	38	12.67
3	Liew,Chern li	3	3	1
4	Martin, John	3	74	24.67

The most productive author in this field is Chen, Yile, who has published four papers, with a total of 29 citations and an average of 7.25 citations per paper. Three scholars are tied for second place; each having published three papers. Among them, Daga, Enrico has received a total of 38 citations, with an average of 12.67 citations per paper, while Martin, John has received 74 citations, with an average of 24.67 citations per paper.

Although Chen, Yile has the highest number of publications, the citation rate is lower than that of Martin, John and Daga, Enrico. Martin, John has published three papers and received a total of 74 citations, with an average of 24.67 citations per paper. Daga, Enrico has received 38 citations, with an average of 12.67 citations per paper. These results indicate that Chen, Yile demonstrates strong productivity in terms of publication output, while citation-based impact indicators suggest that the research outputs of Martin, John have higher academic influence.

Table 2: Highly Cited Authors

NO	Author	Citations	Documents	Average Citation/Publication
1	Bao, Jigang	151	2	75.5
2	Huang, Zhuowei	151	2	75.5
3	Weng,Lisheng	151	2	75.5
4	Abbas, Jaffar	127	2	63.5
5	Martin, John	74	3	24.67
6	Liang, Xiaoxu	72	2	36

Three authors are tied for the highest citation count in this field, namely Bao, Jigang, Huang, Zhuowei, and Weng, Lisheng. Each of these scholars has published two papers, with a total of 151 citations and an average of 75.5 citations per paper. The fourth-ranked author is Abbas, Jaffar, who has published two papers, with a total of 127 citations and an average of 63.5 citations per paper.

It is noteworthy that although Martin, John has published three papers with a total of 74 citations, the average citation per paper is only 24.67, which is significantly lower than that of

International Journal of Law, Government and Communication
EISSN : 0128-1763
IJLGC
Volume: 11 Issue: 43 (March 2026) PP. 495-514

the top four authors. This indicates that while Martin, John has a relatively higher number of publications, citation-based impact indicators suggest that the research outputs of Bao, Jigang, Huang, Zhuowei, and Weng, Lisheng demonstrate stronger academic influence. These scholars have achieved higher academic recognition with fewer publications.

In addition, Liang, Xiaoxu has published two papers and received a total of 72 citations, with an average of 36 citations per paper. Although the total citation count is similar to that of Martin, John, the higher average citation rate, resulting from fewer publications, indicates stronger influence at the individual paper level. This further confirms that in the field of cultural heritage communication on social media, the academic quality and impact of publications are more critical than publication quantity.

Bibliometric Analysis of Journals

Journal analysis is an important method for identifying core sources of academic literature within a specific discipline. Bradford's Law, as a classical theory in bibliometrics, classifies journals into a core zone, a related zone, and a peripheral zone based on patterns of literature distribution, thereby identifying the core group of journals within a particular research field (Borgohain et al., 2021). The application of this law helps determine the primary academic publication platforms in the field of cultural heritage communication on social media and their distribution of academic influence (Xue & Liu, 2024).

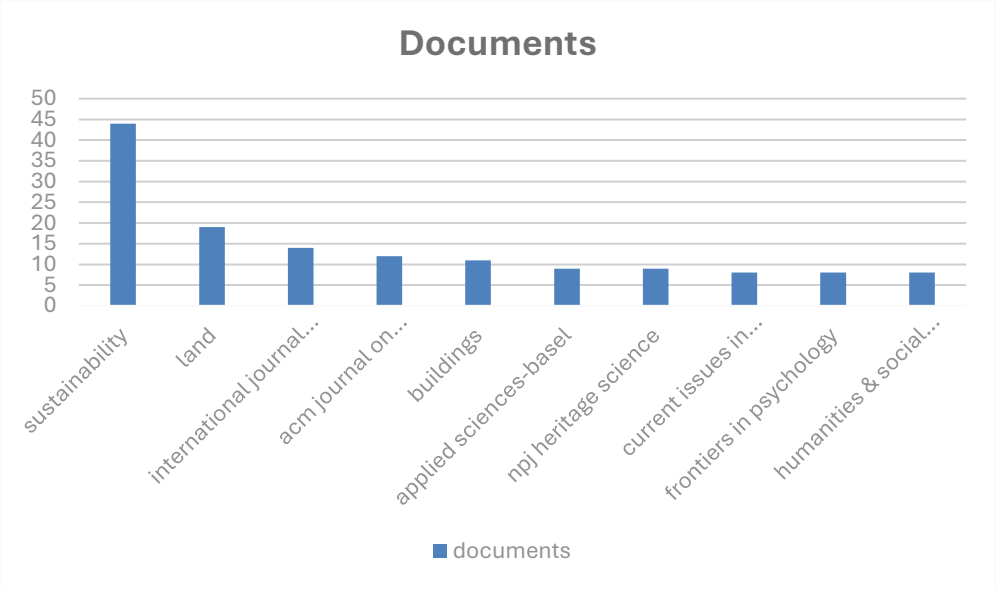


Fig 4. Distribution Of Paper Publication Time

The chart presents the distribution of the top ten journals in terms of publication output in this research field. Among them, Sustainability ranks first with 45 published articles, making it a major publication platform for research on cultural heritage communication on social media. As a multidisciplinary journal, its research scope covers topics such as sustainable development, cultural heritage conservation, and digital technology applications, which are highly aligned with the theme of this study. The second-ranked journal, Land, has published 19 articles and focuses on topics such as land use, cultural landscapes, and heritage spaces, providing an important publication outlet for geographical and spatial research on cultural heritage. In addition, specialized heritage journals such as Heritage (15 articles) and Journal of

International Journal of Law, Government and Communication
EISSN : 0128-1763
Volume: 11 Issue: 43 (March 2026) PP. 495-514

Cultural Heritage (12 articles) also demonstrate relatively high academic activity, reflecting the interdisciplinary nature of research in this field.

The thematic distribution of these core journals indicates that research in this field mainly focuses on issues such as sustainable protection and transmission mechanisms of cultural heritage, the application of digital technologies and social media in heritage communication, spatial attributes of heritage, and public participation. The diversified distribution of journals suggests that research on cultural heritage communication through social media has formed a relatively mature academic publication system, with increasingly prominent interdisciplinary characteristics.

Bradford's Law reveals the mathematical pattern of journal literature distribution, in which the number of journals in the core zone, related zone, and peripheral zone follows an approximate ratio of $1:n:n^2$, while the number of published articles in each zone remains roughly equivalent. This pattern indicates that although the number of journals in the core zone is relatively small, they publish the majority of key research outputs in the field. The number of journals in the related zone is approximately n times that of the core zone, with a comparable number of publications. The number of journals in the peripheral zone is approximately n^2 times that of the core zone, with a publication volume similar to that of the other two zones (Bradford, 1934; Hjørland, 2007).

Based on the statistical distribution of journals in the literature sample of this study, Sustainability is the journal with the highest number of publications, with 45 related articles. According to the calculation formula of Bradford's Law, assuming $n_2 = 45$, the calculated result is $N \approx 6.71$. Based on this result, journals with seven or more publications are identified as forming the core journal group in this research field.

Table 3: Core Journals And Their Citations

Source	Documents	Citations	Average Citation/Publication
Sustainability	44	458	10.41
Land	19	97	5.11
International journal of heritage studies	14	89	6.36
Acm journal on computing and cultural Heritage	12	94	7.83
Buildings	11	59	5.36
Applied sciences-basel	9	33	3.67
Npj heritage science	9	14	1.56
Current issues in tourism	8	93	11.63

International Journal of Law, Government and Communication
EISSN : 0128-1763
Volume: 11 Issue: 43 (March 2026) PP. 495-514

Frontiers in psychology	8	99	12.38
Humanities & social sciences Communications	8	26	3.25

The table presents the publication output, total citation counts, and average citations per article of core journals in this research field. Sustainability ranks first with 44 published articles, accumulating 458 citations and achieving an average of 10.41 citations per article, indicating a clear publication volume advantage and strong academic influence in the field of cultural heritage communication on social media. Land ranks second with 19 published articles. However, with 97 total citations and an average of 5.11 citations per article, its academic influence is relatively lower than that of Sustainability. The International Journal of Heritage Studies has published 14 articles, with 89 total citations and an average of 6.36 citations per article, demonstrating a stable contribution to theoretical and practical research in cultural heritage studies.

It is noteworthy that although Sustainability leads significantly in publication volume, its average citation rate is lower than that of Frontiers in Psychology and Current Issues in Tourism. Frontiers in Psychology has published eight articles and received 99 citations, with an average of 12.38 citations per article. Current Issues in Tourism has also published eight articles and received 93 citations, with an average of 11.63 citations per article. These results suggest that while Sustainability demonstrates strong productivity in terms of publication output, citation-based impact indicators show higher academic influence for research published in Frontiers in Psychology and Current Issues in Tourism.

In addition, the ACM Journal on Computing and Cultural Heritage has published 12 articles, accumulating 94 citations, with an average of 7.83 citations per article. This reflects the journal's specialization and strong academic recognition in the fields of cultural heritage digitization and computer technology applications. These findings further indicate that research on cultural heritage communication through social media demonstrates strong interdisciplinary characteristics, with knowledge convergence across sustainable development, tourism management, and behavioral research.

International Journal of Law, Government and Communication
EISSN : 0128-1763
Volume: 11 Issue: 43 (March 2026) PP. 495-514

Bibliometric Analysis of The Country

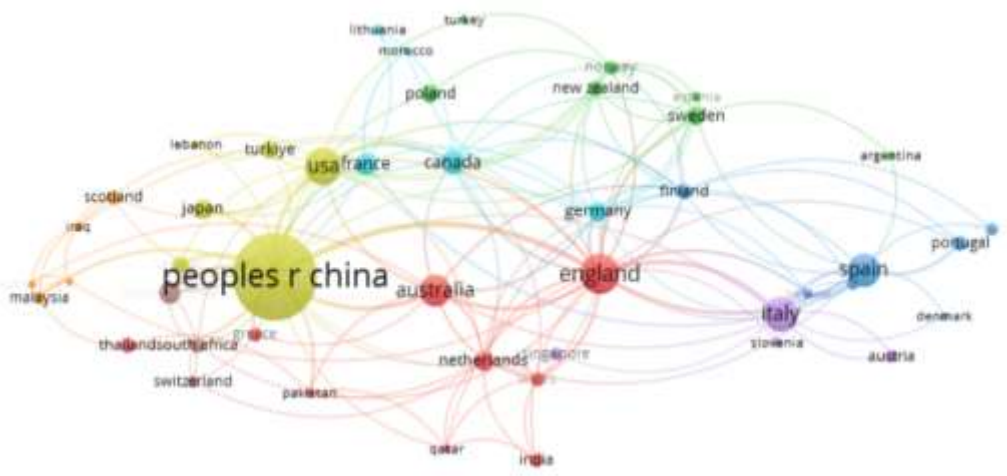


Fig 5. Map Of Cooperation Between Countries

The figure illustrates the country collaboration network, where each node represents a country. The size and color of each node reflect the level of participation and research activity of that country in the field of cultural heritage communication on social media. The connections between nodes represent academic collaborations between countries. Thicker lines and a higher number of connections indicate more frequent collaboration.

China functions as a central hub in the field of cultural heritage communication on social media, reflecting its substantial contribution to this research area. China maintains academic collaborations with multiple countries, highlighting its central position in the international research landscape. The United Kingdom has a large node size and maintains close collaborations with China, Australia, the Netherlands, Spain, and other countries, demonstrating strong research capacity in digital cultural heritage communication. Italy, as a country with a large number of World Heritage sites, also shows high research participation. Its node size is comparable to that of the United Kingdom, reflecting sustained research strength in cultural heritage digitization, heritage communication, and public participation. Italy mainly collaborates with countries such as China, the United Kingdom, and Spain, demonstrating its strong academic foundation in cultural heritage protection and social media application research.

In comparison, the node size of the United States is relatively smaller, indicating a lower proportion of publications in this specific research theme compared with the United Kingdom and Italy. However, the United States demonstrates dense collaborative connections with multiple countries, suggesting that it plays a bridging role in the international collaboration network. This pattern indicates that the United States tends to emphasize cross-national collaboration and methodological or technological contributions, rather than relying primarily on publication volume.

Australia, Spain, and the Netherlands also have moderately sized nodes in the network, indicating stable participation in research on cultural heritage communication through social media. These countries often collaborate with core research countries such as the United Kingdom and the United States and play complementary and cooperative roles within the global research network.

International Journal of Law, Government and Communication
EISSN : 0128-1763
Volume: 11 Issue: 43 (March 2026) PP. 495-514

Overall, the country collaboration network demonstrates a structural pattern characterized by China as the primary high-output core country, with the United Kingdom and Italy showing strong research productivity within the European region, and the United States playing a bridging role in cross-national collaboration. This distribution pattern indicates that research on cultural heritage communication through social media has developed into a globally collaborative research field characterized by multi-country participation, regional coordination, and leadership by core research countries.

Keyword Analysis

Keyword Co-occurrence Relationship

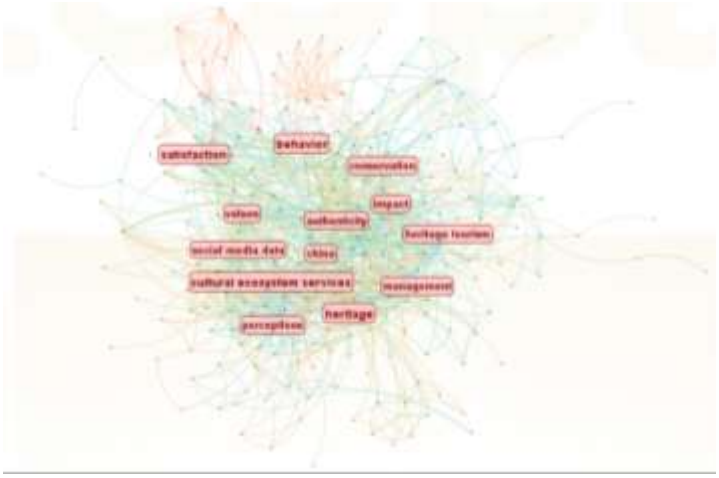


Fig 6. Keyword Co-occurrence Relationship

This section applies a keyword co-occurrence analysis method to extract and statistically analyze terms from the titles, keywords, and abstracts of the retrieved literature. A total of 2,357 keywords were identified through the analysis. To focus on the core research themes, a minimum occurrence threshold of three times was set. Based on this criterion, 291 high-frequency keywords were selected and included in the co-occurrence network analysis.

CiteSpace software was used to visualize the keyword co-occurrence relationships, with the aim of revealing the knowledge structure and major research hotspots in this field.

Table 4: Keyword Co-occurrence Explan

Keyword	Node Characteristics	Academic Role
Social Media	One of the largest nodes in the network, positioned at the center of the map and marked by high centrality, indicating the highest frequency of occurrence and a strong hub role in the bibliometric analysis. This node forms dense connections with keywords	Social media functions as the core platform and research carrier for cultural heritage communication and application studies. It is directly associated with public participation, communication pathways, and digital interaction mechanisms, making it the central topic

International Journal of Law, Government and Communication
EISSN : 0128-1763
Volume: 11 Issue: 43 (March 2026) PP. 495-514

	such as cultural, heritage, and tourism.	within the overall research network.
Cultural Ecosystem Services	Located in the lower-central area of the network, forming cluster relationships with keywords such as values and heritage.	The presence of this keyword indicates that research has expanded to include the evaluation of ecological value and social functions of cultural heritage, reflecting a growing trend toward interdisciplinary integration.

Keyword	Node Characteristics	Academic Role
Tourism	Located in the upper-right area of the map with a relatively large node size, forming strong connections with keywords such as cultural heritage and intangible cultural heritage, indicating a close association with the core research themes.	Tourism represents the application context and economic extension of cultural heritage communication on social media, highlighting the important role of social media in heritage tourism promotion, destination image construction, and the influence on tourist behavior.
Intangible Cultural Heritage	This node is closely connected with cultural heritage, indicating that intangible cultural heritage represents an important sub-direction within the current research field. The connection density suggests strong research attention in areas such as digital communication, cultural identity, and community participation.	Research on intangible cultural heritage highlights the application value of social media in the presentation, revitalization, and transmission of traditional culture.
Impact	Functions as a key bridging node connecting multiple themes and forms linkage relationships with keywords such as tourism, social media, and perceptions.	This keyword emphasizes the evaluation of communication outcomes in cultural heritage communication on social media, covering dimensions such as social impact, economic impact, and cultural identity influence, and serves as an important indicator for measuring communication effectiveness.

International Journal of Law, Government and Communication
EISSN : 0128-1763
Volume: 11 Issue: 43 (March 2026) PP. 495-514

Perception	Positioned in the upper region of the network, forming high-density connections with keywords such as impact, tourism, and management.	This node reflects research attention on public attitudes, cognition, and experiential dimensions, indicating a shift in cultural heritage communication on social media research toward audience psychology and social value considerations.

Keyword	Node Characteristics	Academic Role
Cultural Ecosystem Services	Located in the lower-central area of the network, forming cluster relationships with keywords such as values and heritage.	The presence of this keyword indicates that research has expanded to include the evaluation of ecological value and social functions of cultural heritage, reflecting a growing trend toward interdisciplinary integration.

Keyword Clustering Relationship

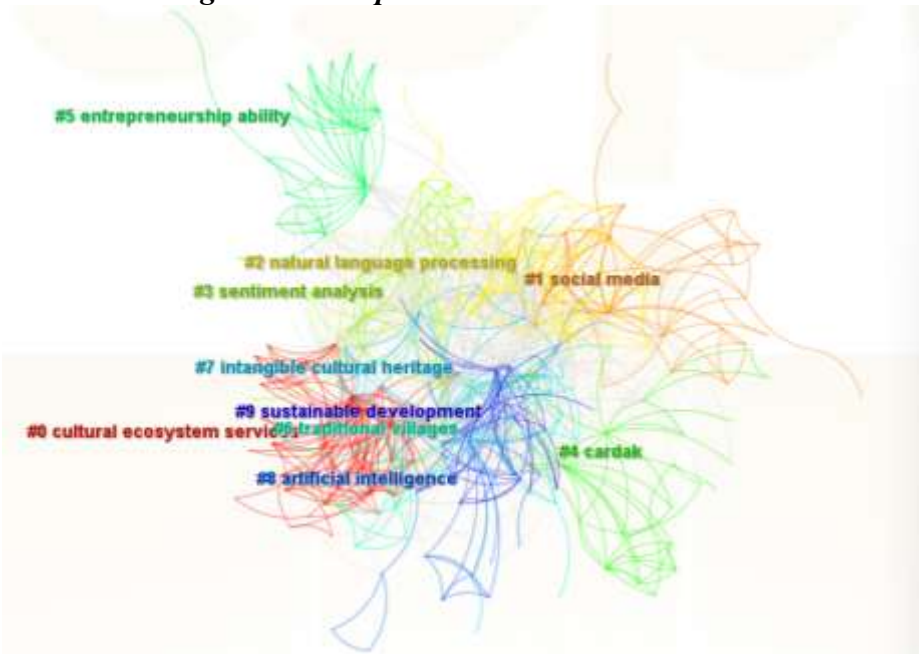


Fig 7. Keyword Clustering Relationship

Through this keyword clustering map, the interrelationships and evolutionary trajectory of research themes within the field of cultural heritage communication on social media can be clearly observed. Different colored regions and numbered labels in the figure correspond to different keyword clusters, with each cluster representing a specific research subfield or methodological direction.

The map presents ten major keyword clusters (labeled #0 to #9). Each cluster is named after the keyword with the highest relevance, reflecting the research focus and theoretical connotation of that cluster. This clustering analysis reveals the major topic distribution within

International Journal of Law, Government and Communication
EISSN : 0128-1763
Volume: 11 Issue: 43 (March 2026) PP. 495-514

the field of cultural heritage communication on social media and demonstrates how different subthemes are interconnected through shared methodologies, conceptual linkages, and practical interactions. Together, they form a multidimensional and interdisciplinary research landscape. The clustering modularity Q value is 0.5427, and the average silhouette S value is 0.8024, indicating a significant clustering structure and high internal homogeneity within clusters, suggesting strong reliability of the clustering results.

Digital Technology and Heritage Conservation: This theme explores how technological tools facilitate the digital transformation of heritage resources and how digital platforms support living heritage conservation and sustainable management.

Intelligent Applications and Data Analytics: This theme focuses on the role of emerging intelligent technologies in cultural heritage management, communication, and interpretation. Research emphasizes how machine learning algorithms, text mining, and sentiment computing techniques extract public attitudes, emotions, and cognitive patterns toward cultural heritage from large-scale social media data.

Social Media Platforms and Communication Mechanisms: This theme examines how social media platforms promote public participation in cultural heritage communication. It explores the value of user-generated content, online interaction, and information diffusion in heritage transmission.

Sustainable Development and Social Innovation: This theme investigates how the economic value of heritage can be realized through social media marketing, cultural and creative industries, and related approaches while maintaining heritage authenticity and integrity. It also examines how these approaches help cultivate local entrepreneurial capacity and support sustainable development and rural revitalization in heritage regions.

Keywords Time Evolution Trend

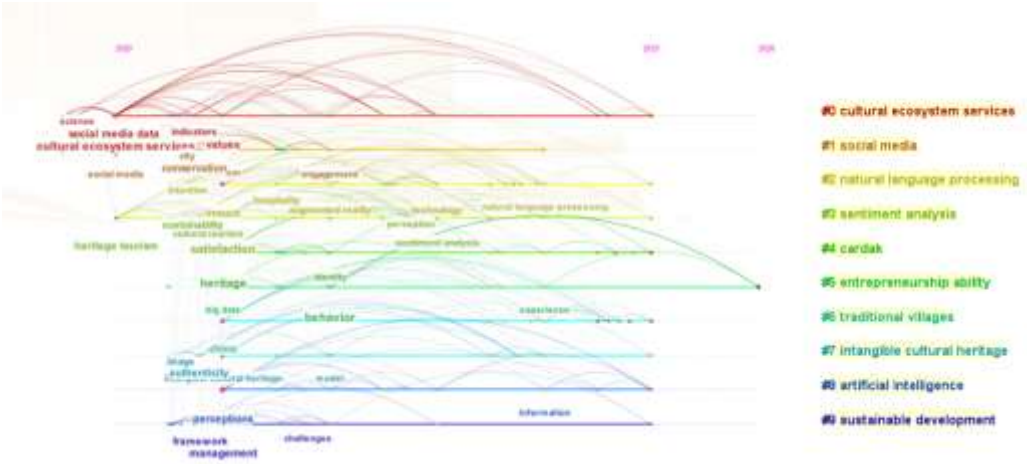


Fig 8. Keywords Time Evolution Trend

The timeline map visually presents the research trends and evolutionary trajectories of various keyword themes between 2020 and 2025. Each horizontal line in the figure represents a keyword cluster, corresponding to the research themes identified in the previous clustering analysis. The distribution of nodes along the timeline reflects the research activity level of each

International Journal of Law, Government and Communication
EISSN : 0128-1763
Volume: 11 Issue: 43 (March 2026) PP. 495-514
theme during different periods. The node size represents keyword frequency, while the node position indicates the time of first appearance. Through this temporal visualization, it is possible to observe the starting point, development stages, and continuity characteristics of each research theme.

The cultural ecosystem services cluster spans from 2020 to the present. Keywords include cultural value, social indicators, civilization, and conservation. This theme has existed since the initial stage of the timeline and continues to the present, indicating that it belongs to the foundational theoretical direction of the field. Research mainly focuses on the evaluation of social value in cultural heritage, cultural well-being functions, and the construction of cultural ecological value systems.

The social media cluster spans from 2021 to 2025. Keywords include social media data, engagement, interaction, and communication pathways. This theme has strengthened significantly after 2021 and continues through 2025, indicating that social media has become a core application scenario in cultural heritage research. Research mainly focuses on digital communication mechanisms, user participation patterns, and data-driven communication analysis.

The natural language processing cluster spans from 2022 to 2025. Keywords include text analysis, semantic recognition, and knowledge extraction. This theme mainly appears in the middle and later stages of the timeline, indicating that it represents an emerging technological research direction and reflects the deep integration of computational methods into cultural heritage research.

The sentiment analysis cluster spans from 2022 to 2025. Keywords include emotion recognition, public attitudes, and experience evaluation. This theme is typically associated with natural language processing research pathways and serves as an important technical tool for public perception research.

The intangible cultural heritage cluster spans from 2021 to 2025. Keywords include traditional culture, knowledge transmission, and cultural identity. This theme has maintained stable research activity throughout the middle and later stages, indicating that intangible cultural heritage remains a core component of cultural heritage research while gradually integrating digital technology research pathways.

The traditional village cluster spans from 2021 to 2023. Keywords include rural culture, cultural landscape, and community conservation. This theme represents a stage-specific research hotspot.

The artificial intelligence cluster spans from 2022 to the present. Keywords include machine learning, intelligent recognition, and automated analysis. This theme represents a rapidly growing research direction in the later period, indicating a clear strengthening of technology-driven research trends.

The sustainable development cluster spans from 2021 to 2025. Keywords include cultural tourism, social development, and environmental conservation. This indicates that cultural heritage research is increasingly emphasizing social application value.

International Journal of Law, Government and Communication
EISSN : 0128-1763
Volume: 11 Issue: 43 (March 2026) PP. 495-514

The entrepreneurial capability cluster spans from 2022 to 2024. Keywords include cultural industries, creative economy, and employability. This theme represents an application expansion research direction.

The Cardak and regional cultural research cluster spans from 2021 to 2023. This theme represents research focusing on specific cultural spaces and is more case-oriented in nature.

The analysis of keyword evolution trajectories indicates that the field of cultural heritage research is undergoing a transition from traditional conservation models toward digitally mediated communication modes characterized by technology-driven approaches and public participation. Social media interaction, artificial intelligence applications, digital humanities research, and citizen curation mechanisms have become central academic focuses, indicating that digital technological innovation is reshaping the overall ecology of cultural heritage conservation and communication.

Discussion And Implications Results

Based on the bibliometric analysis results, research on cultural heritage communication through social media has formed a relatively stable knowledge system with clear interdisciplinary characteristics (Liang et al., 2021; Lian & Xie, 2024). The journal distribution results indicate that relevant research outputs are mainly concentrated in fields such as sustainable development, tourism management, ecological assessment, and digital technology applications (García-Ceballos et al., 2021; Süer, 2025). This suggests that the research direction is gradually moving beyond traditional disciplinary boundaries and transitioning toward an interdisciplinary integration research model. The country collaboration network analysis shows a cooperation pattern characterized by China as the central hub, regional collaborative clusters formed in Europe, and broad multi-regional global participation (Tang et al., 2024; Huang et al., 2025), indicating that research on digital cultural heritage communication has entered a stage of global collaborative development.

The results of keyword co-occurrence and clustering analysis further reveal that digital technology application, intelligent data analytics, public participation mechanisms, cultural value identity, and sustainable development pathways have become the main research directions in this field (Li et al., 2024). The relatively high modularity and silhouette values indicate that the research theme structure is clear and demonstrates strong stability (Vlase & Lähdesmäki, 2023). The temporal evolution analysis results show that since 2020, research focus has gradually expanded from technological applications to social value and cultural identity issues (Zhang & Dong, 2024). At the same time, with the continuous development of artificial intelligence technologies, while communication efficiency has been improved, new research concerns have emerged regarding the authenticity of cultural expression, the accuracy of historical context, and the boundaries of cultural reproduction (Shehata et al., 2024). This further highlights the need to coordinate technological applications with cultural value protection.

At the theoretical level, the findings indicate that research on cultural heritage communication through social media is gradually shifting from a technology application orientation toward a socio-technical system integration orientation (Ariza-Colpas & Piñeres-Melo, 2024). Digital technologies and social media platforms are gradually evolving from single communication tools into important mechanisms supporting cultural value reproduction and social identity

construction. Stable connections among technological variables, behavioral variables, and value variables within the keyword structure indicate that the research paradigm is evolving toward the integration of technological, social, and cultural dimensions (Li et al., 2025). The cluster structure shows multidimensional coordinated distribution across digital technology application, intelligent innovation, public participation, cultural identity, and sustainable development, reflecting the systemic relationships among technological support, social interaction, and value construction during the digital transformation of cultural heritage (Huang, 2024). This study partially addresses the separation between technological application perspectives and social value perspectives in cultural heritage social media communication research and provides a reference framework for future research from a socio-technical integration perspective (Zhang et al., 2022).

From a practical perspective, cultural heritage management and communication practices need to further strengthen the coordination between data-driven approaches and social participation mechanisms (Li et al., 2024). Cultural heritage managers can integrate social media data analytics, artificial intelligence, and natural language processing technologies to optimize public participation pathways and promote a shift in cultural heritage communication from display-oriented approaches toward comprehensive social value creation (Shehata et al., 2024). At the same time, digital communication processes require stronger systematic management of cultural authenticity protection and cultural identity expression (Huang, 2024). In the context of the increasing application of generative artificial intelligence in cultural content production, relevant institutions need to improve digital content authenticity evaluation and review mechanisms to reduce potential risks of cultural expression bias caused by technology-generated content (Li et al., 2025). In the global digital communication environment, strengthening cross-cultural communication capabilities will help promote the sharing and dissemination of cultural heritage within global knowledge exchange systems (Tang et al., 2024).

From a development trend perspective, interdisciplinary integration will continue to be an important driving force for the sustained development of this field. The integration of digital humanities, computational social science, and cultural ecology research may form new growth directions (Alviz-Meza & Vasquez-Coronado, 2022). With the continuous expansion of digital cultural communication scale, digital cultural governance, algorithmic ethics standards, and cultural diversity protection will gradually become important research topics (Vlase & Lähdesmäki, 2023). Overall, cultural heritage research is gradually shifting from a traditional conservation orientation toward a comprehensive social value creation orientation, emphasizing the integrated functions of cultural heritage in social identity construction, knowledge transmission, and social innovation (Zhang & Dong, 2024).

Overall, research on cultural heritage communication through social media is currently at a critical transition stage from scale expansion to structural optimization (Huang et al., 2025). By integrating journal structure analysis, country collaboration network analysis, and keyword knowledge structure analysis, this study reveals that the field is forming a research pattern supported by digital technology as a methodological foundation, social participation as a practical pathway, and cultural value reconstruction as a developmental orientation (Lian & Xie, 2024). This trend provides important theoretical references for innovation in cultural heritage protection and communication models in the digital era and offers valuable insights for future research on digital governance and sustainable development of cultural heritage (Li et al., 2025).

International Journal of Law, Government and Communication
EISSN : 0128-1763
Volume: 11 Issue: 43 (March 2026) PP. 495-514

Conclusion

This study applies bibliometric visualization analysis methods to conduct a systematic examination of author distribution, journal sources, country collaboration networks, and keyword evolution characteristics in this research field. The findings indicate that cultural heritage communication on social media has developed into a research field with significant interdisciplinary attributes, particularly forming relatively mature research paradigms in core areas such as digital technology application, public participation mechanism design, and cultural identity construction.

The bibliometric analysis reveals the core research contributors, the structure of international academic collaboration networks, and the evolutionary pathways of research themes in this field. These findings provide empirical evidence for understanding the knowledge structure and development trends of the field. The research outcomes not only offer a knowledge map to support further theoretical exploration in academia but also provide methodological references for cultural heritage management practitioners in advancing digital transformation and establishing systematic protection and transmission frameworks.

Acknowledgements: During the research and writing of this dissertation, I consistently received careful guidance and strong support from my supervisor. I would like to express my most sincere gratitude for the dedication and assistance provided by my supervisor.
I would also like to extend my sincere appreciation to the reviewers for their constructive comments and valuable suggestions.
Finally, I would like to express my heartfelt thanks to all teachers, colleagues, and family members who provided support and assistance throughout the research process.

Funding Statement: No funding

Conflict of Interest Statement: The authors declare that there is no conflict of interest regarding the publication of this paper. All authors have contributed to this work and approved the final version of the manuscript for submission to the International Journal of Law, Government and Communication (IJLGC)

Ethics Statement: We would like to clarify that the data used in this study are derived from publicly available online secondary sources. Therefore, the study does not involve human or animal subjects and does not require ethical approval.

Author Contribution Statement: All authors made significant contributions to the writing of this manuscript. Balamuralithara Balakrishnan was responsible for the study's methodological design and overall supervision. Wang Xiaojing was responsible for data collection, data analysis, and drafting the conclusion section. All authors reviewed and approved the final version of the manuscript prior to submission.

References

Alviz-Meza, A., & Vasquez-Coronado, M. H. (2022). Bibliometric analysis of fourth industrial revolution applied to heritage studies based on Web of Science and Scopus databases (2016–2021). Heritage Science, 10, 821. https://doi.org/10.1186/s40494-022-00821-3.

Ariza-Colpas, P. P., & Piñeres-Melo, M. A. (2024). Sustainability in hybrid technologies for heritage preservation. Sustainability, 16(5), 1991. https://doi.org/10.3390/su16051991.

Borgohain, D. J., Verma, M. K., Nazim, M., & Sarkar, M. (2021). Application of Bradford's law of scattering and Leimkuhler model to information science literature. COLLNET Journal of Scientometrics and Information Management, 15(1), 197–212. https://doi.org/10.1080/09737766.2021.1893347.

Bradford, S. C. (1934). Sources of information on specific subjects. Engineering, 137, 85–86.

Du, Q., Zhang, X., & Li, H. (2024). Protocol for conducting bibliometric analysis in biomedicine and related research using CiteSpace and VOSviewer. iScience Protocols, 103269. https://doi.org/10.1016/j.xpro.2024.103269

García-Ceballos, S., Rivero, P., & Molina-Puche, S. (2021). Educommunication and archaeological heritage: Social media, sustainability and participation. Sustainability, 13(4), 1602. https://doi.org/10.3390/su13041602.

Hjørland, B. (2007). Practical potentials of Bradford's law: A critical examination of the received view. Journal of Documentation, 63(3), 359–377. https://doi.org/10.1108/00220410710743298

Huang, Y., He, X., Lian, Z., & Yang, Z. (2025). Mapping the landscape of digital cultural heritage research: A quantitative and visual bibliometric study. Library Hi Tech. https://doi.org/10.1108/LHT-09-2023-0465.

Huang, Y. (2024). Bibliometric analysis of GIS applications in heritage studies. Heritage Science, 12, 163. https://doi.org/10.1186/s40494-024-01063-0.

Liang, X., Lu, Y., & Martin, J. (2021). A review of the role of social media for the cultural heritage sustainability. Sustainability, 13(3), 1055. https://doi.org/10.3390/Su13031055.

Liang, X. (2022). Social media as a medium to promote local perception of World Cultural Heritage. Land, 11(6), 841. https://doi.org/10.3390/land11060841.

Li, J., Pan, J., Dou, Q., Fu, F., & Shi, Y. (2024). Digital footprint as a public participatory tool. Land, 13(6), 743. https://doi.org/10.3390/land13060743.

Li, W., Xie, Q., Ao, J., Lin, H., Ji, S., Yang, M., & Sun, J. (2025). Systematic review: A scientometric analysis of the status, trends and challenges in the application of digital technology to cultural heritage conservation (2019–2024). npj Heritage Science, 3, 1636. https://doi.org/10.1038/s40494-025-01636-8.

Lian, Y., & Xie, J. (2024). The evolution of digital cultural heritage research: Identifying key trends, hotspots, and challenges through bibliometric analysis. Sustainability, 16(16), 7125. https://doi.org/10.3390/su16167125

Muhtar, M., & Tuhumury, J. J. (2024). Bibliometric perspectives on digital technologies in cultural heritage: Analyzing research trends and innovations. East Asian Journal of Social Sciences. https://esj.eastasouth-institute.com/index.php/esssh/article/view/350.

Shehata, A. O., Noroozinejad Farsangi, E., & Mirjalili, S. (2024). Smart preservation of cultural heritage: A bibliometric review. Buildings, 14(12), 3818. https://doi.org/10.3390/buildings14123818.

Süer, S. (2025). Digitalization of cultural heritage tourism: A bibliometric network analysis study. Journal of Humanities and Tourism Research. https://dergipark.org.tr/en/pub/johut/issue/90996/1602076.

Tang, Y., Liu, L., Pan, T., & Wu, Z. (2024). A bibliometric analysis of cultural heritage visualisation based on Web of Science from 1998 to 2023. Humanities and Social Sciences Communications, 11, 3567. https://doi.org/10.1057/s41599-024-03567-4.

Vlase, I., & Lähdesmäki, T. (2023). A bibliometric analysis of cultural heritage research. Humanities and Social Sciences Communications, 10, 582. https://doi.org/10.1057/s41599-023-02182-3.

Zhang, Y., & Dong, C. (2024). Sustainable development of digital cultural heritage. Sustainability, 16(17), 7577. https://doi.org/10.3390/su16177577.

Zhang, J., Xiong, K., Liu, Z., & He, L. (2022). Knowledge system of world heritage tourism. Heritage Science, 10, 654.