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Cultural Heritage Management and Sustainable Development: Major Themes and Research Trajectories

Abstract: - Our research endeavors to uncover patterns and understand the intellectual framework of studies on cultural heritage management and sustainable development. In this study, we utilize secondary data sourced from the Scopus database. We retrieved and downloaded 185 documents for subsequent analysis. The data was subjected to bibliometric analysis for thorough examination. The analysis exposed six melodies, i.e., Cultural Heritage Management and Sustainable Urban Development; Sustainable Development and Management of Cultural Heritage; Cultural Heritage and Vernacular Architecture; Adaptive Reuse of Industrial Heritage Sites and Urban Regeneration; Heritage Management and Sustainable Development Goals (SDGs); World Heritage Sites and United Nations Educational Scientific and Cultural Organization (UNESCO), respectively. This study makes contributions both academically and within the community. The study provides important insights into the most influential journals, countries, and articles, which is academically essential. Also, six major themes that significantly contribute to the domain of cultural heritage management and sustainable development literature are presented, and they also provide an avenue for future research. Defending biological diversity, ecosystem services, cultural heritage, and associated values is crucial on the communal front. It should be the mainstay for achieving economic and social growth of local communities with environmental sustainability.

Keywords: Cultural heritage management; Sustainable development; Bibliometric analysis.

1. Introduction

The increasing speed of modernization and the pace of societal change have increased the significance of heritage and its preservation for the human race. The "evidence of past societies can provide a sense of belonging and security to modern societies and be an anchor in a rapidly changing world. In many societies, too, heritage can be an important definer of identity. Understanding the past can also be of great help for managing the problems of the present and the future" (UNESCO World Heritage Centre- Manual Guide, 2013).

The various forces such as rapid urbanization, industrialization, globalization, over-exploitation of natural resources, climate change-induced disasters, and conflicts between regions have put heritage in different geographical areas of the world, jeopardizing the perceptions and behavior of local community people. However, on the other hand, people feel connected to their cultural heritage. The term 'cultural heritage' has broadened substantially in recent times, partly because of the efforts by UNESCO. Today 'cultural heritage' does not denote only monuments and collections of objects but encompasses a range of "traditions or living expressions inherited from our ancestors and passed on to our descendants, such as oral traditions, performing arts, social practices, rituals, festive events, knowledge and practices concerning nature and the universe, or the knowledge and skills to produce traditional crafts" (UNESCO World Heritage Convention, n.d.).

Cultural heritage has been acknowledged to have the potential to contribute to social, economic, and environmental goals. However, cultural heritage and its importance should have been included in the mainstream sustainable development debate. Grounded on a solid plea from stakeholders at the nationwide and home-grown level, the 2030 Agenda espoused by the UN General Assembly integrated the role of culture, via cultural heritage and creativity, as an enabler of sustainable development across the Sustainable Development Goals (UNESCO World Heritage and Sustainable Development, n.d.).

The above discussion demonstrates the need to synthesize, analyze, and scrutinize the existing knowledge of cultural heritage management and sustainable development and explore the way forward. A comprehensive analysis exploring the various avenues such as publication volume, most cited work, influential authors, journals,

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and countries contributing to cultural heritage management and sustainable development and its patterning about structural forces such as the change in cultural heritage regimes is the need of the hour. The fundamental objective of our research work is to discover such patterns and comprehend the intellectual structure of cultural heritage management and sustainable development research. Considering the above-discussed goals, the researchers attempt to address the following questions in the study:

RQ1: What advancements have been made in the literature concerning cultural heritage management and sustainable development?

RQ2: Which authors, journals, and countries stand out as significant contributors to cultural heritage management and sustainable development?

RQ3: What are the primary research areas and emerging patterns in the field of cultural heritage management and sustainable development?

To answer the above research questions, a bibliometric analysis using the Scopus database was conducted. Descriptive statistics was also used to describe the development and impact created by journal articles. VoS Viewer and Biblioshiny software were used to envisage networks of co-occurrences of authors' keywords, trends and present different research patterns. The paper's structure is as follows: The subsequent section provides an introduction to the concept of cultural heritage management and sustainable development, followed by an outline of the methodology employed. This is succeeded by the results section, offering an overview of the findings. Subsequently, the study's critical implications are discussed. Lastly, the paper concludes with a section addressing its limitations and suggesting avenues for future research.

2. Cultural Heritage Management and Sustainable Development: The Idea and the Concept

The celebrated social scientist and professor of anthropology, Dr. James Spradley, defined culture as "the acquired knowledge people use to interpret experience and generate behavior." Culture is a multi-faceted concept and evolves with the changing times. Culture influences individual behavior and encompasses values, rituals, customs, guidelines, and rules for conduct in a social and economic environment. "UNESCO Institute for Statistics" (2009) and "UNESCO Framework for Cultural Statistics" define cultural heritage as "artefacts, monuments, a group of buildings and sites, museums that have diverse values including symbolic, historic, artistic, aesthetic, ethnological or anthropological, scientific and social significance. It includes tangible heritage (movable, immobile and underwater), intangible cultural heritage (ICH) embedded into cultural, and natural heritage artefacts, sites or monuments" (UNESCO Institute of Statistics, n.d.). Cultural heritage connects the past to the future and acts as a bridge.

Recent decades have garnered scholarly interest in this multidisciplinary topic (Lähdesmäki et al., 2020; Waterton and Smith, 2009). According to Vlase, and Lähdesmäki (2023), this interest can be gauged through the launch of numerous research centers, scholarly associations, seminar and conference series, research projects etc. that yonder the boundaries of the traditional view of cultural heritage where cultural heritage is viewed as a material object that demands conservation and preservation. The interest is also visible by the increasing number of research studies published in peer-reviewed journals having multidimensional approaches towards this research domain.

Also, Cultural Heritage is integral to UNESCO's principal mandate to foster "equitable and sustainable development". The notion of sustainability was initially not engrained in the agenda, but it entered the Operational Guidelines in the year 1994 (UNESCO World Heritage Convention, 1994). The 26th session (Budapest,2002) adopted what is also referred as "Budapest Declaration" which clearly states the vital need to "ensure an appropriate and equitable balance between conservation, sustainability and development, so that World Heritage properties can be protected through appropriate activities contributing to the social and economic development and the quality of life of our communities"(UNESCO, 2015).

With travelers worldwide' increasing interest in cultural exploration and their desire to seek authentic and sustainable experiences encompassing cultural heritage, it becomes much more vital to accelerate the dialogue and process of sustainable cultural heritage management. With growing interest in various cultural heritage sites,

the rise of specialized indigenous heritage tour operators, the increasing effect of social media and travel influencers, user-friendliness to information and peer recommendation, cultural heritage management will act as a critical factor for sustainable development in the near future both in the urban as well as rural areas of the world.

3. Research Methodology

3.1 Data Collection

The present study uses the secondary data retrieved from the Scopus database. Scopus- a well-known database was launched by Elsevier in the year 2004 and covers a large number of titles, publishers, and peer-reviewed journals from all the top-level subject fields. The popularity and extensiveness of the Scopus database were the main reasons for the choice of this database as a data source. The data for the study was retrieved on 7 November 2023. The search syntax used are presented in Table I. The documents and type of source were limited to 'articles' and 'journal', respectively as the articles in journals undergo a rigorous peer-review process which ensures the quality of publication. Also, the publication stage was limited to 'final'. A total number of 185 documents were found, which were downloaded as a CSV file (comma-separated values file) for further use and analysis.

Table I. Search syntax on Scopus (Source: Author Compilation)

DATA SOURCE	SEARCH SYNTAX
Scopus (www.scopus.com)	(TITLE-ABS-KEY ("Cultural Heritage Manag*" OR "Heritage Manag*" OR "Heritage Preservation") AND TITLE-ABS-KEY ("Sustainable Development*" OR "SDG*")) AND (LIMIT-TO (DOCTYPE, "ar")) AND (LIMIT-TO (LANGUAGE, "English")) AND (LIMIT-TO (SRCTYPE, "j")) AND (LIMIT-TO (PUBSTAGE, "final"))(185 documents)

3.2 Data Analysis

Data analysis in this study employed bibliometric analysis, a method pioneered by Pritchard in 1969, who defined it as "the application of mathematical and statistical methods to books and other means of communication." White and McCain (1989) further elaborated, describing bibliometrics as "the quantitative study of literature as they are reflected in bibliographies." According to Osareh (1996), bibliometric studies encompass descriptive methods and citation analysis, although they may involve one or both.

In essence, bibliometric analysis examines the connections between articles through citation and co-citation, as noted by Punjani et al. (2019). In this study, citation analysis, co-citation analysis, and the co-occurrence of authors' keywords were utilized as techniques for bibliometric analysis. These methods allow for a comprehensive examination of the literature and the relationships between different research works within the field of study.

4. Results

This section presents the findings derived from the bibliometric analysis. It is divided into three subsections: Results Overview, Co-Citation and Citation Analysis. The results are illustrated using VOS Viewer, charts, graphs, and Biblioshiny outputs, facilitating a comprehensive understanding of the findings.

4.1 Overview

Table II delivers a picture of the outcomes obtained from the search. The total number of articles retrieved between 1990 and 2023 is 185 from 105 journals with 464 authors. The total number of cited references is 9221, and the annual growth rate is reported as 10.11%.

Table II: Indication of Overall Outcomes (Source: Biblioshiny)

Parameters	Results
Total Articles Found	185
Journals	105
Authors	464
Time-span	1990-2023
Annual Growth rate	10.11%
Cited References	9221

4.2 Citation Analysis

4.2.1 Yearly publications

As reported in Table III, the number of publications in the area of sustainable development and cultural heritage management in the last decade. The number shows an upward trend. The total number of publications from 2014 to 2020 shows a gradual growth. However, the year 2021 witnessed a sharp rise with 28 publications. One of the reasons can be the growing interest of the academic and research fraternity in the area of SDGs or Sustainable Development Goals that were introduced in the year 2015 and "provides a shared blueprint for peace and prosperity for people and the planet, now and into the future" (United Nations, The 17 Goals).

Table III: Number of Publications (Last ten years)

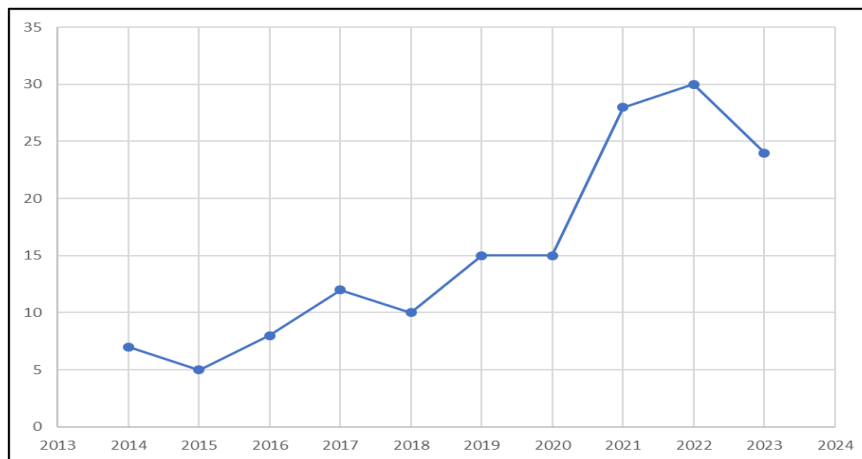| Year	No of Publication
2023	24
2022	30
2021	28
2020	15
2019	15
2018	10
2017	12
2016	8
2015	5
2014	7

Figure I: No of the article published (Year 2014 to October 2023)

4.2.2 Most Cited Articles

"Assessing, mapping and quantifying cultural ecosystem services at the community level," authored by Plieninger et al. (2013) is the article with the highest citations. This article has 811 citations to its credit. This is followed by the articles "Measuring Links Between Cultural Heritage Management and Sustainable Urban Development: An Overview of Global Monitoring Tools" (Guzman et al., 2017) and "A Framework for Sustainable Heritage Management: A Study of UK Industrial Heritage Sites" (Landorf, 2009) with 140 and 128 citations respectively (Table IV).

Table IV: Articles with Maximum Citation

Sr. No.	Title	Authors	Journal (Year)	Total Citations
1	Assessing, mapping, and quantifying cultural ecosystem services at the community level	Oteros-Rozas E., Plieninger T., Bieling C and Dijks S.	Land Use Policy (2013)	**811**
2	Measuring links between cultural heritage management and sustainable urban development: An overview of global monitoring tools	Colenbrander B.J.F., Guzmán P.C., and Roders A.R.P.	Cities (2017)	**140**
3	A framework for sustainable heritage management: A study of UK industrial heritage sites	Landorf C.	International Journal of Heritage Studies (2009)	**128**
4	Preserving heritage places under a new paradigm	Araoz G.F.	Journal of Cultural Heritage Management and Sustainable Development (2011)	**108**
5	Editorial: bridging cultural heritage and sustainable development	Pereira Roders A. and Van Oers R.	Journal of Cultural Heritage Management and Sustainable Development (2011)	**100**
6	Cultural heritage in building and enhancing social capital	Murzyn-Kupisz M. and Działek J.	Journal of Cultural Heritage Management and Sustainable Development (2013)	**75**
7	Protocol to manage heritage-building interventions using heritage-building information modelling (HBIM)	Jordan-Palomar I., Tzortzopoulos P., García-Valldecabres J. and Pellicer E.	Sustainability (Switzerland) (2018)	**67**
8		Keitumetse S. O.	Sustainable Development (2011)	**64**

	Sustainable development and cultural heritage management in Botswana: Towards sustainable communities			
9	A small-scale event and a big impact- Is this relationship possible in the world of sport? The meaning of Heritage Sporting Events for sustainable development of Tourism experiences from Poland	Malchrowicz-Mośko E.and Poczta J.	Sustainability (Switzerland) (2018)	**61**
10	We don't talk about Çatalhöyük, we live it: Sustainable archaeological practice through community-based participatory research.	Atalay S.	World Archaeology (2010)	**56**

4.2.3 Most Influential/Contributing Author

Figure II shows the output of Biblioshiny concerning most contributing authors in the domain of cultural heritage management and sustainable development. The contribution of an author can be appraised in terms of the collective number of articles published in the researchers' field of interest. Interestingly, A.R. Pereira Roders and R. Van Oers are the most prolific authors, with four papers to their credit.
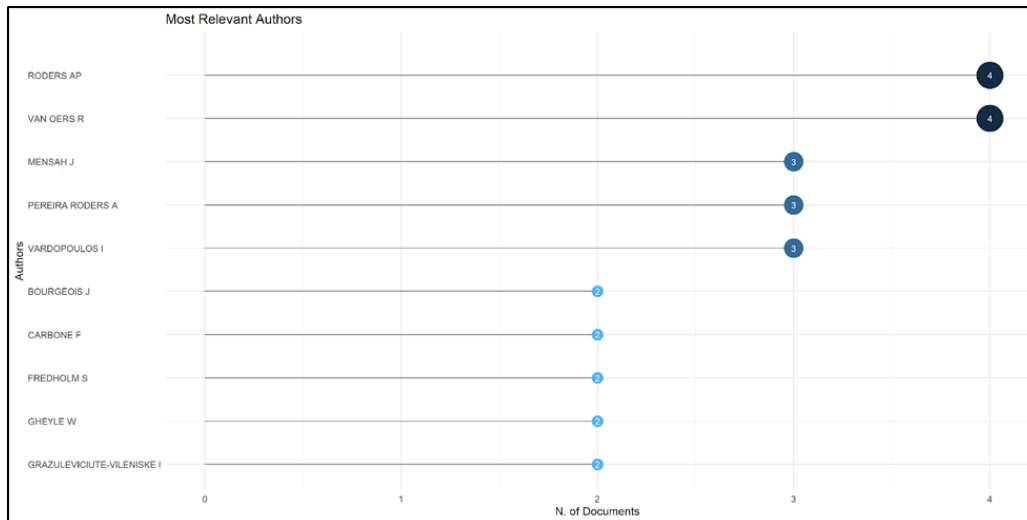

Figure II: Most Influential Authors (Source: Biblioshiny)

4.2.4 Journal with Maximum Influence

The most powerful journals can be judged grounded on the next parameters:

a. The total number of articles published within the domain of the present study.

b. Regarding the total citations received.

   a. As depicted by Figure III, "Sustainability (Switzerland)" holds the head place with 32 published articles, followed by the "Journal of Cultural Heritage Management and Sustainable Development" with 28 pieces.
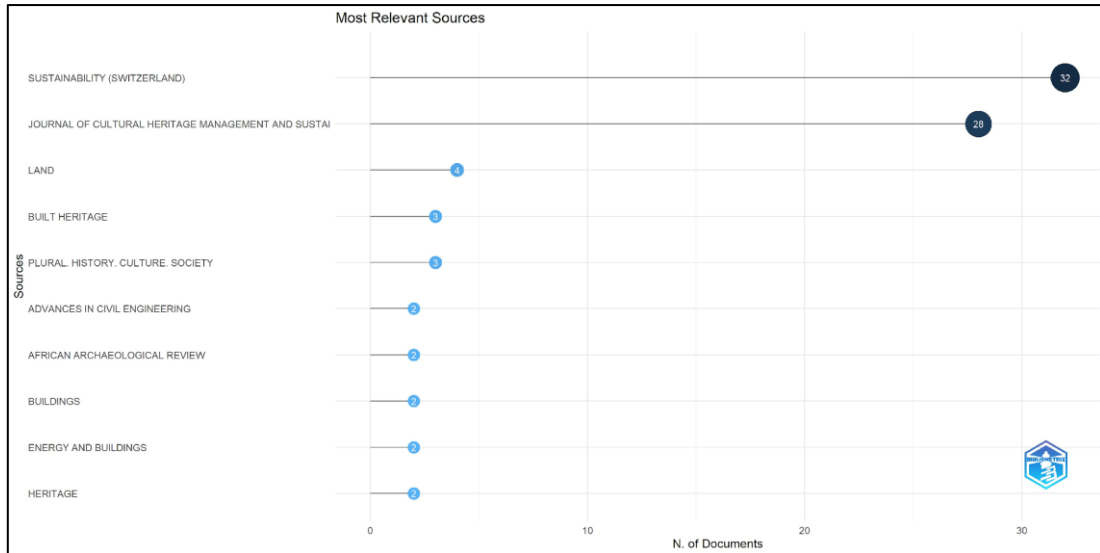
Figure III: Most Influential Journal: About the published articles extent

(Source: Biblioshiny)

b. *In terms of total citations received*: Based on the total citations received, the *Land Use Policy* journal ranked the highest with 811 citations, followed by the *Journal of Cultural Heritage Management and Sustainable Development* with 478 citations and Sustainability (Switzerland) with 374 citations, respectively.

4.2.5. Most Significant Country

The most significant countries are created on the subsequent parameters:

a. *The cumulative number of articles published within the scope of the present study:* As can be observed from Figure IV, the United Kingdom holds the first place with 18 published articles. The United Kingdom is followed by Italy, China, Spain, and the United States with 17, 16, 15 and 12 articles, respectively.
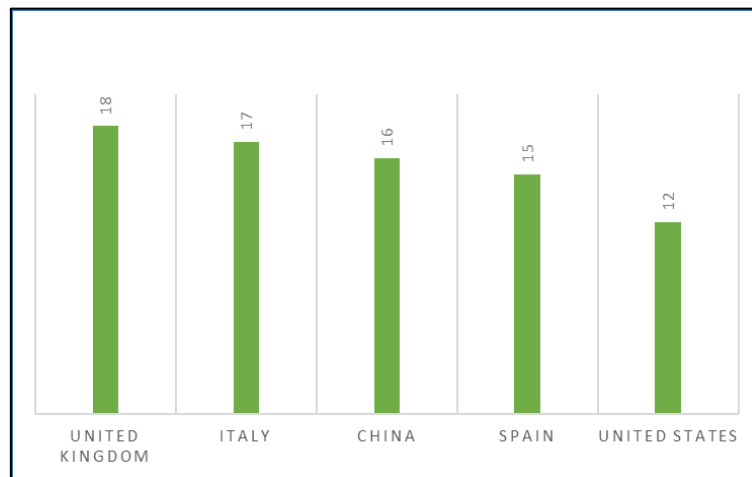

Figure IV: Most significant nations: total published articles

b. *Concerning the total received citations,* Germany grasps the first place with 842 citations. The USA and Australia follow this with 223 and 199 citations.
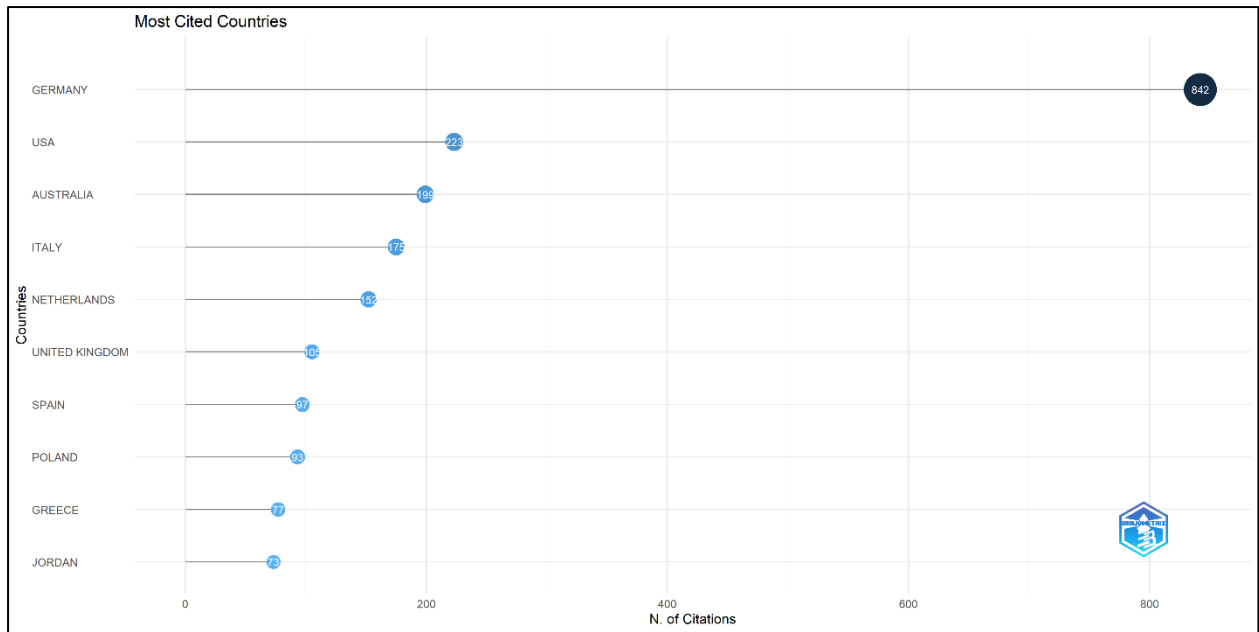
Figure V: Most significant nations: total received citations (Source: Biblioshiny)

4.3 Author's Keyword Analysis

The results of the Keyword Analysis are shown in Figure VI. The results show that 'sustainable development 'is the most frequently used keyword, with 68 occurrences. This is followed by 'cultural heritage' and 'heritage conservation', with 36 and 35 occurrences.
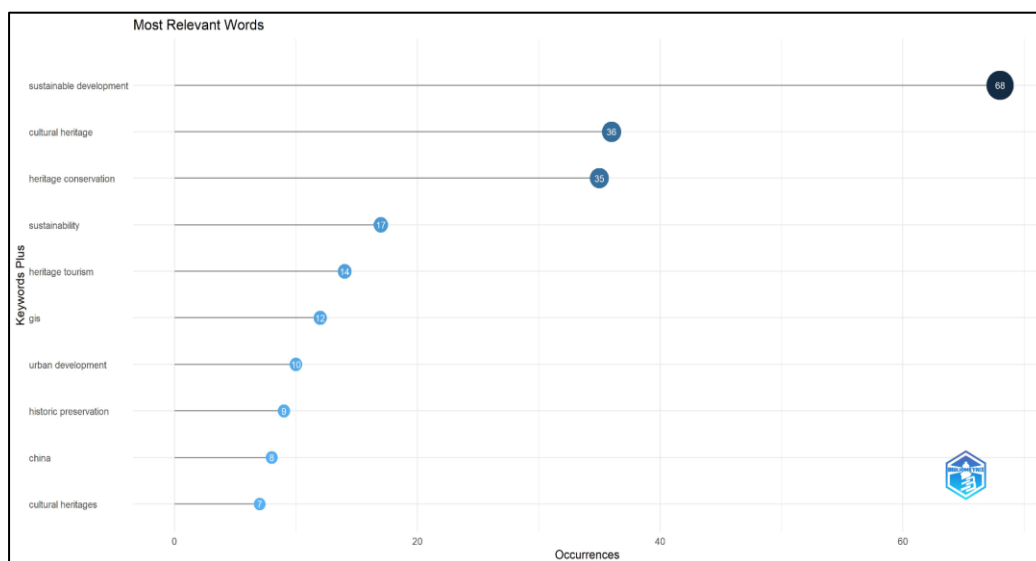

Figure VI: Top 10 Most Popular Authors Keywords (Source: Biblioshiny)

The analysis of trending topics over the years (refer to Figure VII) depicts that in 2012, heritage preservation and archaeology were the key focus of research. However, introducing SDGs or Sustainable Development Goals in 2015, the rise in the discussions around sustainable development, cultural heritage, heritage conservation, and heritage management gained significant importance, especially during 2018–2021. The term sustainable development had the highest frequency (60) in 2020.
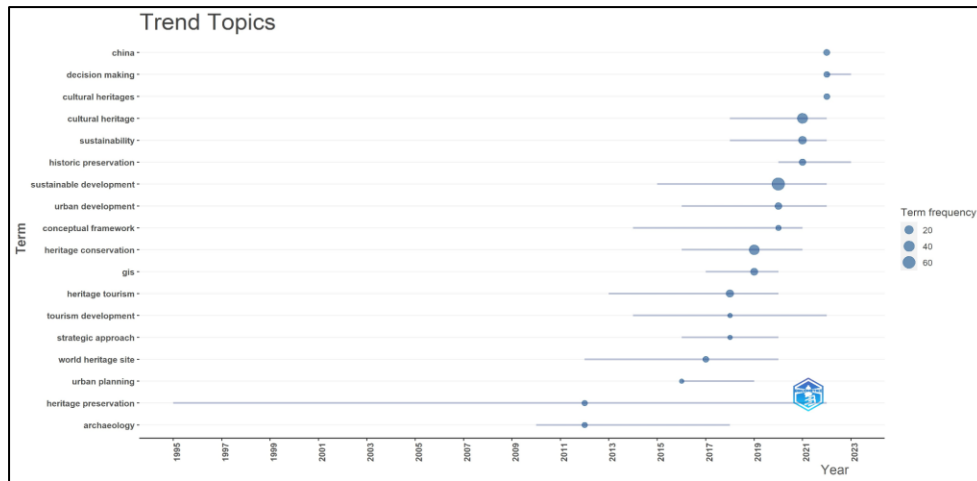
Figure VII: Trending Topics: 1995-2023 (Source: Biblioshiny)

4.4 Co-Citation Analysis:

Co-existence of Author Keywords: Keywords are integral to any research paper or document. They are vital in discovering and locating the research paper or document. The authors also try to emphasize the critical element of the research domain by using keywords. The co- existence of the author's keywords aids in exploring the most common and popular research area in a particular field. Also, future research trends can be observed and unearthed. VoS viewer was used to analyze the co- existence of the author's keywords. Figure VIII depicts the co-occurrence of the author's keywords in the present research interest area. The nodes of the figure represent the various author keywords, and the size signifies the frequency of occurrence. The relationship between the two keywords is represented by connection, and the width indicates the strength of associations. The total number of keywords was 696 in number. However, to avoid complexity the minimum occurrence of keywords was set as 3 . Out of 696 keywords, 38 keywords met the threshold level. Overall, these 38 keywords were divided into eight clusters, 150 links, and a total link strength of 264. The most used authors' keywords were sustainable development (total link strength of 94 and with 59 occurrences), cultural heritage (total link strength of 69 and 38 occurrences), and heritage management (total link strength of 46 and 26 occurrences).
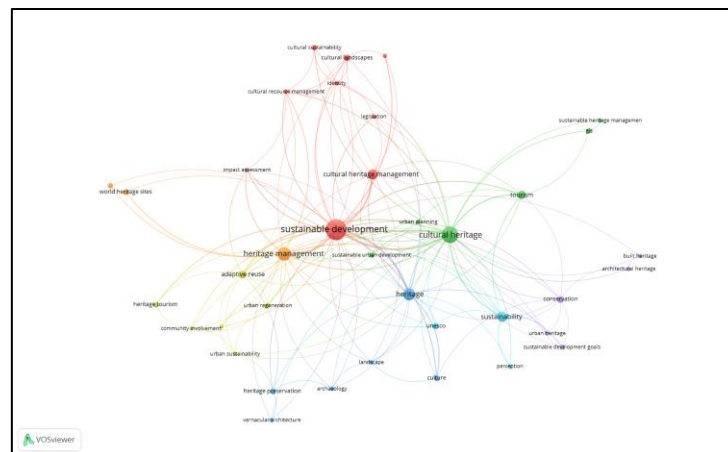

Figure VIII-Co-occurrence of Authors Keywords (Source: VoS Viewer)

5. Significant Themes and Research Trajectories-

VoS viewer was used to analyze the co- existence of the author's keywords. The major themes that emerge in sustainable development and cultural heritage management are summarized in Table V and discussed in the following section.

Table V: Key themes in the field of Sustainable and Development Management of Cultural Heritage

KEYWORDS	OCCURRENCES	TOTAL LINK STRENGTH	THEMES
CLUSTER-1			
sustainable development	59	94	Sustainable development and management of cultural heritage
cultural heritage management	14	19	
cultural landscapes	6	10	
cultural sustainability	4	6	
cultural heritage preservation	3	5	
cultural resource management	3	11	
identity	3	8	
legislation	3	6	
CLUSTER-2			
cultural heritage	38	69	Cultural Heritage Management and Sustainable Urban Development
tourism	10	15	
gis	4	4	
sustainable urban development	4	7	
sustainable heritage management	3	2	
urban planning	3	6	
CLUSTER-3			
Heritage	21	38	Cultural Heritage and Vernacular Architecture
culture	5	11	
Heritage preservation	5	8	
archaeology	3	6	
landscape	3	7	
vernacular architecture	3	4	
CLUSTER-4			
adaptive reuse	9	25	Adaptive reuse of industrial heritage sites and urban regeneration
Heritage tourism	5	6	
urban regeneration	4	9	
community involvement	3	8	
industrial heritage	3	8	
urban sustainability	3	7	
CLUSTER-5			
architectural heritage	3	4	SDGs and Heritage Management
built heritage	3	3	
conservation	7	13	
sustainable development goals	4	6	
urban heritage	3	5	
CLUSTER-6			
sustainability	15	18	

UNESCO	6	6	**UNESCO and World Heritage sites**
world heritage sites	5	6	
perception	3	5	
impact assessment	3	12	

Theme 1: Sustainable Development and Management of Cultural Heritage

The report 'Our Common Future' (1987) by the World Commission on Environment and Development summarizes sustainable development as "a process aimed at achieving environmental,

economic and social improvement, both locally and globally, or a state that can be maintained at a certain level indefinitely. This process binds in a relationship of interdependence, the protection and enhancement of natural resources to the economic, social, in order to meet the needs of the present generation, without compromising the ability of future generations to meet their own needs". The broader perspective of sustainable development clearly manifests the role of cultural heritage (Gražulevičiūtė, 2006.). Unfortunately, globalization and other drastic environmental and social changes of the 21st century have caused an excessive menace to cultural heritage. Therefore, it is vital to recognize the value and importance of cultural heritage and its role in sustainable development. Cultural heritage and its tangible and intangible composition need to be managed to align with sustainable development and its goals. This can be done in multiple ways, including the vital role of the local community people that can act as custodians of their cultural heritage (Keitumetse,2011).

Theme 2: Cultural Heritage Management and Sustainable Development of Urban Area

The conservation of cultural heritage is of profound importance for any nation as it holds the sense of belonging and is a foremost constituent of the quality of life (Alseragy et al., 2018). Past studies have advocated the role and benefits of cultural heritage preservation in developing cities and communities (Guzmán et al., 2017). As stated by Mori and Yamashita (2015) for a city to be sustainable, "economic and social benefits need to be maximized to enhance living standard as far as the city target is sustainable in terms of environmental limitations and socioeconomic equity". This indicates that in the present VUCA (volatile, uncertain, complex, and ambiguous) world, a vital aspect of sustainable urban development is management of cultural heritage. It is the need of the hour that the exclusive and distinguishing culture of cities and places around the world should be capitalized. This also calls for integrating various stakeholders like local people, non-governmental organizations (NGOs), civil society organizations (CSO), and Municipal Corporations for sustainable and long-lasting development of cities.

Theme 3: Cultural Heritage and Vernacular Architecture

The last century has witnessed the dominance of "architectural modernism and post-modernism globally". This had catastrophic impacts on the social environment, particularly in cities worldwide (Almantas Samalavičius and Dalia Traškinaitė, 2021). Interestingly, the attention in dialect buildings in addition to reimbursements has increased considerably in the 21st century for multiple reasons. The key reasons are growing awareness regarding cultural heritage, traditional architecture, and research, the rising influence of social media, travel influencers, the growth of social heritage sightseeing, and supportable growth. This interest of people in vernacular architecture can be beneficial for promoting sustainable cultural heritage tourism. One of the key aims of this initiative is to foster collaboration with local organizations and the public to cultivate sustainable economies. Distinct from manufactured tourism, which can be located anywhere, cultural heritage tourism and vernacular architecture are founded on the specific characteristics of the destination and hence provide an opportunity to create jobs new business opportunities, and strengthen local economies (South Dakota State Historical Society, n.d.) Globally, the trend to integrate various stakeholders to endorse cultural heritage and vernacular architecture for sustainable development in urban and rural areas is increasing (Salman, 2018).

Theme 4: Adaptive Reuse of Industrial Heritage Sites and Urban egeneration

Industrial heritage consists of "the remains of industrial culture which are of historical, technological, social, architectural or scientific value. These remains consist of buildings and machinery, workshops, mills and factories, mines and sites for processing and refining, warehouses and stores, places where energy is generated, transmitted, and used, transport and all its infrastructure, as well as places used for social activities related to industry such as housing, religious worship or education" (TICCIH, 2003). Industrial heritage sites are treasured heritage structures. They should be sustained and preserved because the traditional values imbibed in them are vital for the continuity of the culture (Günçe and Misirlisoya, 2015). According to Meng et al. (2023), maximizing "the value of industrial heritage while supporting regional and urban transformation and better integrating urban regeneration is a significant topic in the field of heritage conservation". The last few years have observed the growing interest in the area of adaptive reuse of industrial heritage buildings for urban regeneration and other aspects (Andrade et al.,2023). Still, an open dialogue and appropriate actions toward the preservation of the industrial heritage buildings (depending on the needs of the particular region) requires immediate attention.

Theme 5: SDGs and Heritage Management

In 2015, the United Nations embraced the 2030 Agenda for Sustainable Development. The 2030 Agenda for Sustainable Development prioritizes 'People,' 'Planet,' and 'Prosperity,' aiming to bolster global 'Peace' through collaborative efforts among nations and stakeholders. Despite the modest recognition of culture and heritage in the 17 Sustainable Development Goals (SDGs), organizations like the International Council on Monuments and Sites (ICOMOS) emphasize the crucial role of heritage in advancing the SDGs. More work is needed to understand and discuss the possibilities and challenges that link heritage to each goal. Rapid cultural globalization due to economic globalization has significantly dented the importance of heritage to local communities, adversely affecting local cultures and the values attached to them - economic, social, and environmental sustainability in certain parts of the world. Developed countries target holistic development planning in cities, integrating local heritage, but developing and underdeveloped countries are toddlers and learning to integrate heritage in city planning.

Theme 6: UNESCO and World Heritage sites

"United Nations Educational Scientific and Cultural Organization" or UNESCO is a globally recognized international body that seeks to encourage the "identification, protection, and preservation of cultural and natural heritage around the world considered to be of outstanding value to humanity". The convention was adopted by UNESCO in 1972, and its universal applicability makes it unique. According to UNESCO world Heritage Convention, "Heritage is our legacy from the past, what we live with today, and what we pass on to future generations. Our cultural and natural heritage are both irreplaceable sources of life and inspiration". UNESCO plays a vital role in enhancing the importance and visibility of world heritage sites. This led to competition from nations worldwide for the status of cultural heritage sites. This status boosts multiple economic and developmental activities in and around the heritage sites declared by UNESCO. The UNESCO World Cultural Heritage Site is crucial for tourists worldwide to visit that place. Globally, various efforts are increasing to support the local community to enhance their capacity to adapt to changing development due to world cultural heritage sites.

6. Discussions and contributions

This study endeavors to uncover patterns and grasp the intellectual framework of research in cultural heritage management and sustainable development. Employing bibliometric analysis, it assesses the evolution within this domain. The dataset comprises 185 articles from 105 journals spanning from 1990 to November 2023. To address the research questions, citation analysis, co-citation analysis, and the co-occurrence of authors' keywords are utilized as bibliometric techniques.

The chief two research questions focused on the progression of literature in cultural heritage management and sustainable development and identifying influential authors, journals, and countries. Citation analysis was employed for this purpose, revealing an increasing trend in publication numbers, notably spiking in 2021 with 28 publications. This surge may be attributed to heightened academic and research interest following the introduction of the Sustainable Development Goals (SDGs) in 2015. Among the analyzed works, "Assessing, mapping and quantifying cultural ecosystem services at the community level" by Plieninger et al. (2013) emerged as the most

cited, garnering 811 citations. Notably, 'Sustainability (Switzerland)' ranked highest in terms of articles published within the study domain, with 32 papers, while 'Land Use Policy' topped the list in total citations received, accumulating 811 citations. The United Kingdom led in published articles with 18, while Germany secured the top spot in total citations received, amassing 842 citations.

The study employed the Biblioshiny app, a bibliometric tool integrated into the R-tool software, to identify the most frequently utilized keywords. The keyword analysis results show that 'sustainable development' is the most frequently used keyword, with 68 occurrences. This is followed by 'cultural heritage' and 'heritage conservation', with 36 and 35 occurrences. It is also interesting to note that with the introduction of SDGs or Sustainable Development Goals in 2015, the rise in the discussions around sustainable development, cultural heritage, heritage conservation, and heritage management gained significant importance, especially during 2018–2021.

To tackle the third research inquiry, which pertains to identifying the crucial research domains and emerging trends in the fields of cultural heritage management and sustainable development, a co-citation analysis of authors' keywords was carried out. This examination unveiled six overarching themes, i.e.: *Sustainable Development and Management of Cultural Heritage; Cultural Heritage Management and Sustainable Urban Development; Cultural Heritage and Vernacular Architecture; Adaptive reuse of industrial heritage sites and urban regeneration; SDGs and Heritage Management; UNESCO and World Heritage sites,* respectively.

The contribution of the present study is on academic and communal fronts. The study offers significant insights into the journals, countries, and articles that hold notable influence, which is essential academically. Also, six major themes are presented that make an important contribution to the domain of cultural heritage management and sustainable development literature, and they also provide an avenue for future research. The study discerns the incremental advancement of this research domain across a temporal spectrum. On the communal front, it is crucial to defend biological diversity, ecosystem services, cultural heritage, and associated values. It should be the mainstay for achieving economic and social growth of local communities with environmental sustainability. Local community people should safeguard the preservation, maintenance, fortification, and management of cultural heritage assets as common property resources (CPR), respecting cultural diversity, inclusion, and equity. Government intervention is also vital, and Governments ought to pledge to and execute policies and practices aimed at conserving and managing properties of World Heritage. Meaningful integration of International, National, State, and Native stakeholders will be crucial for Cultural Heritage Management and Sustainable Development in upcoming years.

7. Future Scope with Limitations

The study portrays the current state of literature regarding cultural heritage management and sustainable development. The researchers have tried their best to overcome limitations. However, despite this, certain limitations must be acknowledged. A primary constraint of the study lies in solely relying on a single database (Scopus) for data gathering and analysis. While this approach prevents duplication of research works, it may inadvertently overlook significant papers available in other databases. Nonetheless, this limitation opens avenues for future research to explore this domain by utilizing two or more databases. Furthermore, the study search was restricted to document type "article", source "journal," and publication stage "journal". This restriction may lead to omitting a few quality research works available in other forms, such as book chapters, reports, etc. Future research has the opportunity to expand its scope. While the current study employed bibliometric analysis, which encompasses a diverse range of techniques, there remains potential for future researchers to explore alternative methods. By deviating from the approaches used in this study, they may uncover new perspectives and deeper insights into this field.

To conclude, the present research work endeavors to map the intellectual framework of literature connected to cultural heritage management and sustainable development. The key themes were pointed out, and accordingly, the agendas for future study were set forth. In the 21st century, awareness and research related to cultural and heritage tourism has enhanced. However, there is a strong need to integrate all the stakeholders, especially local communities. This will lead to sustainable growth and development. Also, with climate change and the upsurge in the amount of disasters, regional development planning should be emphasized. Ecosystem services and the

culture associated with them should be valued for sustainable development. Future researchers can explore this paradigm.

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