

A BIBLIOMETRIC ANALYSIS OF PUBLICATIONS WITHIN THE SCOPE OF CULTURAL HERITAGE TOURISM AND DIGITALIZATION

KÜLTÜREL MİRAS TURİZMİ VE DİJİTALLEŞME KAPSAMINDA YAPILAN YAYINLARIN BİBLİYOMETRİK ANALİZİ

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ÖZ

Bu çalışmada, uluslararası yazında kültürel miras turizmi ve dijitalleşme kapsamında yapılan yayınların mevcut durumunun ve gelişim düzeyinin ortaya konması amaçlanmaktadır. Kültürel miras turizmi ve dijitalleşme ile ilgili 1975-2021 yılları arasında uluslararası yazında yer alan çalışmalar belirli parametreler dâhilinde incelenmiştir. Konuya ilişkin yapılan bilimsel çalışmalar, Web of Science (WOS) veri tabanı taranarak ortaya konmuştur. Yapılan aramalar sonucunda "Cultural Heritage Tourism and Digital and Digitalization" konulu toplam 264 bilimsel yayına ulaşılmıştır. Veriler VOSviewer programından yararlanılarak bibliyometrik analize tabi tutulmuştur. Tüm yayınlar, "yayın sayıları, yayın türleri, yayın yılları, yazarlar, ülkeler, diller, araştırma alanları, yayımlandıkları yerler, atıflar, kurumlar" gibi birçok kritere göre sınıflandırılmış ve elde edilen veriler tabloleştirilmiştir. Ayrıca "Cultural Heritage Tourism and Digital and Digitalization" konusuna ilişkin yapılan çalışmalarda "en fazla iş birliği yapan yazarlar, kurumlar, ülkeler, en fazla kullanılan anahtar kelimeler, en fazla atıf alan yazarlar, dokümanlar, kaynaklar ve ülkeler" bibliyometrik analize tabi tutulmuştur. Çalışmadan elde edilen bulguların, özellikle kültürel miras turizmi ve dijitalleşme kapsamında sınırlı sayıda araştırma yapılmış olması nedeniyle bu alana katkı sunacağı ve konuya ilgi duyan araştırmacılara ışık tutacağı düşünülmektedir.

ABSTRACT

In this study, it is aimed to reveal the current situation and development level of publications made within the scope of cultural heritage tourism and digitalization in international literature. Studies on cultural heritage tourism and digitalization in the international literature between 1975-2021 were examined within certain parameters. Scientific studies on the subject were revealed by scanning the Web of Science (WOS) database. As a result of the searches, a total of 264 scientific publications on "Cultural Heritage Tourism and Digital and Digitalization" were found. The data were subjected to bibliometric analysis using the VOSviewer program. All publications were classified according to many criteria such as "number of publications, publication types, publication years, authors, countries, languages, research areas, places of publication, citations, institutions" and the data obtained were tabulated. In addition, "the most collaborating authors, institutions, countries, the most used keywords, the most cited authors, documents, sources and countries" were subjected to bibliometric analysis in studies on the subject of "Cultural Heritage Tourism and Digital and Digitalization". It is thought that the findings obtained from the study will contribute to this field and shed light on the researchers who are interested in the subject, especially since a limited number of studies have been conducted within the scope of cultural heritage tourism and digitalization.

Geliş Tarihi:
30.05.2022

Kabul Tarihi:
24.10.2022

Yayın Tarihi:
27.10.2022

Anahtar Kelimeler
Kültürel Miras
Turizmi
Dijitalleşme
Bibliyometrik
Analiz
Web of Science

Keywords
Cultural Heritage
Tourism
Digitalization
Bibliometric
Analysis
Web of Science

DOI: <https://doi.org/10.30783/nevsosbilen.1123393>.

Atıf/Cite as: Bozkurt, İ., Deniz, G. & Günden, Y. (2022). A Bibliometric Analysis of Publications within the Scope of Cultural Heritage Tourism and Digitalization. *Nevşehir Hacı Bektaş Veli Üniversitesi SBE Dergisi, Dijitalleşme Özel Sayısı*. 166-184.

INTRODUCTION

Cultural heritage tourism, which arises from traveling to listen to the past stories of societies living centuries ago, to see the works they left, to experience the ongoing food, clothing and music traditions of the society, and to participate in authentic activities within the framework of the cultural elements in the destinations that attract the attention of people, is the transfer of all these cultural heritage elements between generations. Cultural heritage tourism, which is an alternative type of tourism arising from the sharing of the hidden stories of each destination's society, past life, historical places and cultural traditions with the visitors, can be defined as *traveling to experience places, artifacts and activities that authentically represent the people and stories of the past* (ACHP, 2002) in short. Cultural heritage tourism is a sustainable development tool that creates intercultural awareness and enables local people to feel a sense of belonging to the region they live in by allowing them to spend their spare time (Chang, 1999) and also increases employment opportunities by contributing to the economic growth of the host society by attracting visitors from outside (Silberberg, 1995). Although tourism is generally perceived as a threat to the protection of world heritage, it is actually a balancing mechanism that ensures the preservation and survival of the heritage. In addition to contributing to national and international promotion by creating attraction in destinations, it also creates value for the protection and sustainability of cultural heritage all over the world by contributing to the social value, economic development and environmental sustainability of a region. With the shift of tourists' preferences to cultural heritage attractions, the importance of the protection and correct management of heritage has increased even more, and the UNESCO World Heritage and Sustainable Tourism Program has undertaken the responsibility of protecting all existing heritage destinations in the world for future generations.

Since it was introduced in the 2000s, cultural heritage tourism have been related in national and international literature with; attitudes of local people (Pekerşen et al., 2019), cultural heritage tourism potential of different destinations (Çetin, 2010; Özdemir, 2011; Ismail et al., 2014; Kalay & Yıldız, 2017; Türker & Yaşar, 2019), traditional crafts (Alagöz et al., 2018), and sustainability (Du Cros, 2001; Ngamsomsuke et al., 2011). Especially with the developments in information technologies in recent years, the digitalization of cultural heritage has gained widespread application in tourism and has been reflected to the literature (Abdo, 2019; Bilgiçli, 2021; De Bernardi et al., 2019; Kordha et al., 2019; Korkmaz, 2021; Mannas et al., 2013; Nacak, 2020; Zamyatina & Solntseva, 2022). The importance of preserving cultural heritage is clear as it strongly influences knowledge, identity, behavior, commitment and beliefs. Digitalization comes into play at this point and plays an active role in both the promotion and protection of cultural heritage. The opportunities brought by digital technology provide benefits in many ways such as protecting the scientific resources that make up the heritage, creating new educational areas, encouraging tourism and facilitating the access of visitors to cultural heritage. With the restrictions caused by the pandemic all over the world, the field of cultural heritage tourism, as well as the sector in general, has faced unprecedented challenges. In addition, businesses that want to maintain their connections with the audiences/customers they appeal to have enabled people to access cultural heritage online with the convenience of digitalization. Thus, when the restrictions are removed, digital cultural heritage elements have started to play an active role in attracting new tourists who have visited or are considering to visit the destination. In addition to the contribution of the digitalization of cultural heritage tourism to the economy; it has contributions such as financing reconstruction after disasters such as fire or earthquake, providing researchers with information without the need for travel, developing the science of history and offering various alternatives for visitors (European Commission, 2020). Therefore, the digitalization of cultural heritage tourism, which has been worthy of evaluation in every respect, has also been reflected in the diversity of publications. With this in mind, in this study, it is aimed to make a bibliometric analysis of the publications on cultural heritage tourism in the international literature and to offer suggestions to fill the gaps in the field.

1. THEORETICAL FRAMEWORK

The concept of “cultural heritage tourism” was introduced in the early 2000s, based on the desire of visitors to go to a destination to see natural and tangible cultural assets in place and to experience intangible cultural heritage elements such as local cuisine, handicrafts and activities specific to the places they visited (Garrod & Fyall, 2000; Chhabra et al., 2003). Cultural heritage elements, which are seen as an important economic resource in terms of tourism in developed countries, are the main reason for the visits of millions of tourists every year. *“Especially foreign tourists visit cultural heritage assets in order to have cultural experiences in the countries they visit and create an economic mobility by spending there”* (Kendir, 2020: 2298). The main travel motive of the visitors who turn to cultural heritage tourism is to experience places, artifacts and events that authentically represent the stories and people of the past, including natural, historical and cultural riches (Hargrove, 2002). Cultural heritage tourism, which is one of the fastest growing niche markets in the industry today, also offers people the opportunity to experience that culture in depth by visiting historical or cultural places in destinations or participating in activities.

It is observed that individuals who want to learn and experience something about faith and culture mostly visit historical places, monuments and landmarks, museums, art galleries and theaters and that they participate in festivals, concerts or special performances (Timothy, 1997). Although their areas of interest are different, cultural heritage tourists also need facilities such as accommodation and food and beverage due to the nature of the tourism sector. Studies show that cultural heritage tourists travel more frequently and spend more money than the average tourist for the experiences they get (ACHP, 2002; Türker & Yaşar, 2019; Guliyev, 2021). Considering that this tourist profile has a higher income, it is a fact that they transfer more resources to the destination they go to.

The importance of tourism role in cultural heritage and the interrelationship between them are due to the fact that natural and historical riches that reflect the cultural identity and traditions of a country, region or a more niche destination are the most valuable elements in the development of tourism. A number of beneficial results are achieved through various opportunities arising from the sharing of resources among them. The strongest argument of cultural heritage tourism can be expressed as strengthening people's interest in history and culture by meeting with different cultures, thus making the cultural heritage of a destination an attraction element, while protecting the heritage through tourism. While it is necessary to protect and develop natural and cultural resources for the continuity of tourism; tourism is also an important tool for the development of cultural and natural values (Uslu & Kiper, 2006).

Digitalization in destination marketing increases its impact day by day and expands the touristic market share of cities (Erkmen & Gönenç Güler, 2020). Earnings from the activities in which cultural heritage elements are used (shows where the dances of the local community are exhibited in a destination, cultural tours to the destination, the presence of restaurants where cultural heritage dishes are eaten, etc.) contribute directly or indirectly to the country's economy by providing job opportunities to the local people, shopping and selling mobility in the region and increasing income. (Chhabra, 2010). Therefore, considering that digital cultural heritage elements play an active role in attracting new tourists who have visited before or are considering to visit the destination, the importance of digitalization in the field of cultural heritage tourism is better understood. Since it was introduced in the 2000s, various studies on the digitalization of cultural heritage tourism have been conducted in national and international literature and the results have been revealed (Abdo, 2019; Bilgiçli, 2021; Cameron & Kenderdine, 2007; De Bernardi et al., 2019; Hemsley et al., 2017; Kordha et al., 2019; Korkmaz, 2021; Mannas et al., 2013; Nacak, 2020; Zamyatina & Solntseva, 2022). In this study, it is aimed to make a bibliometric analysis of the publications on the effects of cultural heritage tourism and digitalization in the international literature, to offer suggestions to fill the gaps in the field and to contribute to the understanding of the subject for practitioners.

2. METHOD

Under this title, the variables used in the research, the data collection method and how the data have been analyzed are explained in detail. Each of them is handled as a sub-title.

2.1. Variables and Measurement

Within the scope of the study, a total of three variables have been considered. These variables are cultural heritage tourism, digital and digitalization. However, the research has focused on the phenomenon of cultural heritage tourism and digitalization, and the phenomenon of cultural heritage tourism and digitalization has been evaluated from a holistic perspective. In other words, studies on cultural heritage tourism and digitalization constitute the basis of this research. In the research, it is aimed to examine the studies (articles, books, papers, etc.) in the international literature between 1975-2021 related to cultural heritage tourism and digitalization within certain parameters and to subject them to bibliometric analysis. Therefore, the current status and development level of international studies within the scope of cultural heritage tourism and digitalization have been determined and it is thought that it will serve as a guide for researchers who will work on the subject.

Alan Pritchard (1969) used the concept of bibliometrics for the first time and stated that the concept should be used instead of the concept of statistical bibliography (Lawani, 1981). The concept of bibliometrics was defined by Pritchard (1969) as *“the application of mathematical and statistical methods to books, articles, papers and other communication media”*. Similarly, Lawani (1981) defines the concept of bibliometrics as *“the application of mathematics and statistical methods to shed light on the processes and course of these sources by counting and analyzing various aspects of written sources”*. Bibliometric research makes it possible to make evaluations about the items such as documents, disciplines, countries and institutions that are the subject of the research, as well as revealing the current status of the changes of these elements over time (Pritchard, 1969). Bibliometrics also provides many contributions to the literature in terms of evaluating academic outputs, identifying reliable scientific publication sources and establishing academic foundations. It is also used as a tool to evaluate scientific quality and efficiency by providing objective criteria in order to evaluate the studies that contribute to the literature. Therefore, bibliometrics is seen as an important tool for many researchers who want to fill in the gaps and develop in related fields (Martinez et al., 2015).

2.2. Data Collection Method

In order to access scientific studies on cultural heritage tourism and digitalization, a search was made in the Web of Science (WOS) database on February 22, 2022. There are some reasons for using this database in the research. First of all, the Web of Science database provides access to many internationally published studies and includes the "Art and Humanities Citation Index (A&HCI)", "Social Science Citation Index (SSCI)", "Science Citation Index (SCI)", "Emerging Sources Citation Index (ESCI)" and "Conference Proceedings Citation Index-Science (CPCI-S)", which are very important in social sciences (Louise et al., 2005). In addition, the Web of Science database also offers us many studies published especially in the field of social sciences (Jacso, 2005). Moreover, Web of Science is a globally accepted, widely used database that provides a simple compilation of information required for bibliometric analysis (Yang et al., 2013).

In order to access scientific studies carried out within the scope of cultural heritage tourism and digitalization; in the Web of Science database, "Cultural Heritage Tourism and Digital and Digitalization" was written in the search section and a detailed search was made in the "topic" tab. The scope of the search includes a long time period between 1975-2021. In this way, it is aimed to reach all the studies on the subject. As a result of the searches made as specified, a total of 264 scientific publications on "Cultural Heritage Tourism and Digital and Digitalization" were found. All scientific publications reached were evaluated within the scope of bibliometric analysis. In this context, all publications were classified according to many criteria such as "number of publications, publication types, publication years, authors, countries, languages, research areas, places of publication, citations, institutions" and the data obtained were tabulated. In addition, in studies on the subject of "Cultural Heritage Tourism and Digital and Digitalization", "the most collaborating authors, institutions, countries, the most used keywords, the most cited authors, documents, resources and countries" were revealed by bibliometric analysis in the VOSviewer program.

2.3. Analysis of Data

The "VOSviewer" program was preferred for the visualization and bibliometric analysis of the data obtained within the scope of the research. VOSviewer is both free and open to everyone, and is expressed as "*a scientific mapping program designed for the visual representation of bibliometric networks*". The program mainly focuses on analyzing bibliometric networks and figurative representation of networks (Van Eck & Waltman, 2017). In the research, "Co-authorship, Co-occurrence and Citation" parameters were used in the VOSviewer program of "authors, documents, countries, sources and institutions" that stand out in studies on "Cultural Heritage Tourism and Digital and Digitalization". Thus, the results of the network analysis for all studies such as articles, books and papers on "Cultural Heritage Tourism and Digital and Digitalization" were obtained.

2.4. Findings

Within the scope of the research, it has been stated before that the VOSviewer program is used for the bibliometric analysis of the studies on the subject of "Cultural Heritage Tourism and Digital and Digitalization" and for the visualization of the outputs. The visuals presented by the program are interpreted through elements such as color, ring, line, element and cluster. Each ring in the resulting image represents an item. These items are reached as a result of filtering according to the number of repetitions. The mentioned items are in the form of source, author, document, institution and country. The size or smallness of the ring in the image is directly proportional to the number of repetitions of the item. Therefore, the largest ring represents the most repeated item, and the smallest ring represents the least repeated item. Elements are shown with a single color and clustered in groups. Each item can only be in one set; but it is also among the cases that the item is not included in any cluster. The lines between the elements in the visual diagram represent the connection strength of the elements with each other. A thick line indicates the presence of a strong connection, while a thin line indicates a weak connection strength (Van Eck & Waltman, 2019).

As a result of the research, the Web of Science database was examined in detail before the program outputs were included, and some information about the "Cultural Heritage Tourism and Digital and Digitalization" studies was presented in a table. Table 1 contains the distribution of studies on "Cultural Heritage Tourism and Digital and Digitalization" published between 1975-2021 by years.

Table 1. Yearly Distribution of Scientific Publications on "Cultural Heritage Tourism and Digital and Digitalization"

Year	Number of Publications	Year	Number of Publications
2021	41	2012	3
2020	45	2011	8
2019	50	2010	7
2018	19	2009	3
2017	24	2008	2
2016	18	2007	1
2015	19	2005	1
2014	14	2004	1
2013	8	-	-
Total Number of Publications			264

A total of 264 publications were made on the subject of "Cultural Heritage Tourism and Digital and Digitalization". According to Table 1, it is seen that the first publication was made in 2004. No study on the subject of "Cultural Heritage Tourism and Digital and Digitalization" was found in the Web of Science database in 2003 and before. The most research on the subject was carried out in 2019, and a total of 50 scientific publications were made. When Table 1 is carefully examined, it can be said that more than half of the total number of publications were made in 2019, 2020 and 2021.

Table 2. Types of Publications on the Subject of "Cultural Heritage Tourism and Digital and Digitalization"

Publication Type	Number of Publications
Article	158
Paper	105
Early Access	7
Review Article	4
Editorial	2
Book Chapter	1

Table 2 shows that the publications on "Cultural Heritage Tourism and Digital and Digitalization" are distributed in the types of "article, paper, early access, review article, editorial and book chapter. In this way, it is seen which type of publication is made the most and the least in the relevant literature, and it is expected that future researchers will contribute to the literature by considering this situation. When Table 2 is examined, it is noteworthy that the number of publication types is higher than the total number of publications reached. This situation can be explained by the possibility of publishing the same studies in different publication types. It is seen that the most publication type on "Cultural Heritage Tourism and Digital and Digitalization" is articles with 158 publications. The article type is followed by 105 papers, 7 early access and 4 review articles, respectively.

Table 3. Top Publishing Countries on "Cultural Heritage Tourism and Digital and Digitalization"

Countries	Number of Publications	Countries	Number of Publications	Countries	Number of Publications	Countries	Number of Publications	Countries	Number of Publications
Italy	68	Malezia	8	Austuria	4	Croatia	3	Ukraine	2
Spain	37	Taiwan	8	Sweden	4	South Korea	2	Canada	1
China	19	Romania	7	Brazil	3	Ecuador	2	Argentina	1
Portugal	16	Russia	7	Finland	3	Latvia	2	Chile	1
Greece	13	Holland	6	Ireland	3	Lithuania	2	Japan	1
France	10	Indonezia	6	Montenegro	3	Slovenia	2	Egypt	1
Germany	10	Bulgaria	6	Poland	3	South Africa	2	Norway	1
England	9	Turkey	5	Switzerland	3	Albania	2	Kazakistan	1
America	9	Australia	4	India	3	Georgia	2	Tailand	1

Table 3 shows the distribution of studies on "Cultural Heritage Tourism and Digital and Digitalization" by country. In Table 3, just like in Table 2, it is observed that the number of publications by country is higher than the total number of publications accessed. This situation is thought to be due to the possibility of publications by co-authors in different countries. Italy emerges as the country with the highest number of publications on "Cultural Heritage Tourism and Digital and Digitalization" with 68 publications. Italy is followed by Spain (37 publications), China (19 publications), Portugal (16 publications) and Greece (13 publications). Turkey is in the 17th place with 5 publications.

Table 4. Most Published Languages on “Cultural Heritage Tourism and Digital and Digitalization”

Publication Language	Number of Publications
English	236
Spanish	15
Italian	5
Russian	3
South African Language	1
Chinese	1
French	1
Portuguese	1
Turkish	1

Since Web of Science is an international database, it is seen that there are publications in many different languages. Table 4 includes the publication languages and the number of publications of the studies on "Cultural Heritage Tourism and Digital and Digitalization". According to Table 4, 236 of 264 studies on "Cultural Heritage Tourism and Digital and Digitalization" were written and published in English. English is followed by Spanish (15 publications), Italian (5 publications) and Russian (3 publications), respectively. There are publications in South African, Chinese, French, Portuguese and Turkish.

Table 5. Publishers with the Most Publications on “Cultural Heritage Tourism and Digital and Digitalization”

Publisher Name	Number of Publications
Springer Nature	26
Multidiscipliner Digital Publishing Institute (MDPI)	25
Taylor & Francis	25
Elsevier	18
IEEE	17
Copernicus Gesellschaft Mbh	8
Emerald Group Publishing	8

Table 5 provides information on the publishers of the studies on “Cultural Heritage Tourism and Digital and Digitalization”. In this context, it is seen that the "Springer Nature" publishing house is in the first place with 26 publications. In addition, “MDPI” and “Taylor & Francis” publishing houses share the second place with 25 publications each.

Table 6. Distribution of Scientific Publications on “Cultural Heritage Tourism and Digital and Digitalization” by Research Areas

Research Areas	Number of Publications
Computer Science	47
Social Sciences	44
Science Technology	29
Arts And Humanities	27
Environmental Science/Ecology	25
Engineering	23
Architecture	19
Business Economics	18
Archaeology	18
Remote Sensing	18
Imaging Science Photo Technology	16
Physical Geography	14
Art	13
Geology	13
Educational Research	12

In the Web of Science database, it has been determined that a total of 54 studies have been conducted on the subject of "Cultural Heritage Tourism and Digital and Digitalization". However, Table 6 includes the first 15 areas with the most studies. The largest number of studies on the subject is in the field of computer science with 47 publications. Computer science is followed by social sciences (44 publications), science technology (29 publications), and arts and humanities (27 publications), respectively. The fact that the number of publications obtained from research areas is more than the total number of publications can also be explained by the fact that a study is included in more than one field.

Table 7. Distribution of Scientific Publications on “Cultural Heritage Tourism and Digital and Digitalization” by Categories

Categories	Number of Publications
Accommodation, Leisure, Sports And Tourism	37
Multidisciplinary Humanities	26
Computer Science Information Systems	21
Interdisciplinary Applications in Computer Science	19
Architecture	19
Environmental Science	19
Remote Sensing	19
Computer Science Theory Methods	18
Archaeology	18
Green Sustainable Science Technology	18

Studies on the subject of "Cultural Heritage Tourism and Digital and Digitalization" have been published in a total of 71 different categories in the Web of Science database. However, Table 7 includes the top 10 categories with the most studies. In this context, the category of “Accommodation, Leisure, Sports and Tourism” has the highest number of studies on “Cultural Heritage Tourism and Digital and Digitalization” with 37 publications. This category is followed by the categories of multidisciplinary humanities (26 publications) and computer science information systems (21 publications), respectively.

Table 8. Distribution of Scientific Publications on “Cultural Heritage Tourism and Digital and Digitalization” by Authors

Authors	Number of Publications
Piscitelli, M	5
Basaraba, N	4
Lombardi, M	4
Clarizia, F	3
Frontoni, E	3
Gonzalez-delgado, JA	3
Goy, JL	3
Martinez-grana, AM	3
Pierdicca, R	3
Roque, MI	3

In the Web of Science database, it was concluded that a total of 292 authors conducted studies on the subject of "Cultural Heritage Tourism and Digital and Digitalization". Table 8 includes the first 10 authors and Piscitelli, M. is in the first place with 5 publications. It is followed by Basaraba, N. and Lombardi, M. with 4 publications each.

Table 9. Distribution of Scientific Publications on the Subject of "Cultural Heritage Tourism and Digital and Digitalization" by Institutions

Institutions	Number of Publications
Consiglio Nazionale Delle Ricerche (CNR)	6
University of Naples Federico II	5
University of Salamanca	5
Polytechnic University of Milan	4
Sapienza University Rome	4
Universitat D Alacant	4
University of Salerno	4
Chinese Academy of Sciences	3
Marche Polytechnic University	3
Multimedia University	3

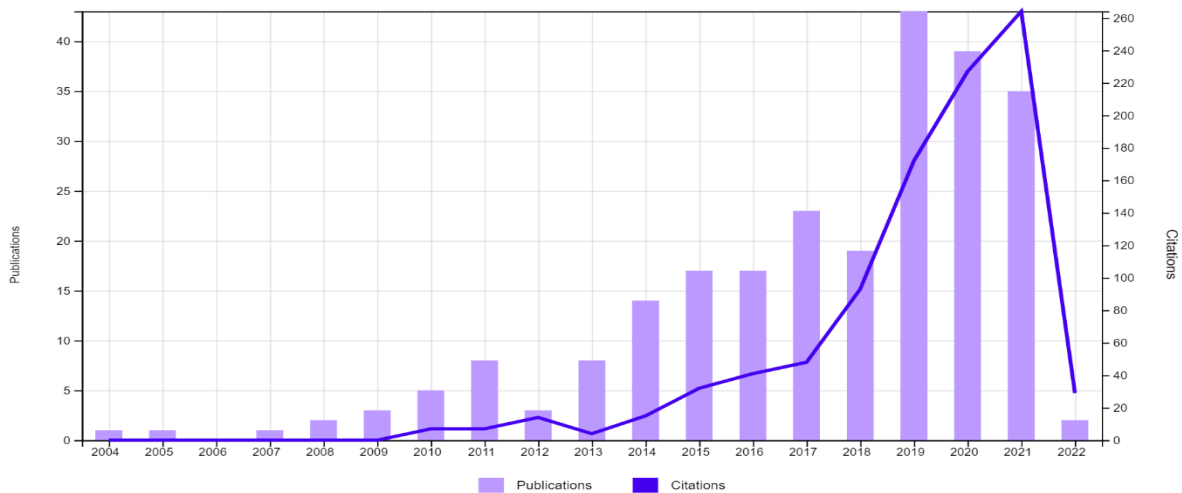
Table 9 presents information on institutions that make scientific publications on "Cultural Heritage Tourism and Digital and Digitalization". There are 255 different institutions within the scope of the subject in the Web of Science database. However, in Table 9, the top 10 institutions among these are given. Consiglio Nazionale Delle Ricerche (CNR) ranks first with 6 publications. University of Naples Federico II (5 publications) and University of Salamanca (5 publications) share the second place in terms of number of publications.

Table 10. Most Cited Scientific Publications on the Subject of "Cultural Heritage Tourism and Digital and Digitalization"

Publication Name	Author	Source	Year Released	Number of Citations
"A virtual tour of geological heritage: Valourising geodiversity using Google Earth and QR code?"	Martinez-Grana, AM; Goy, JL; Cimarra, CA	Computers & Geosciences	2013	52
"Management of immersive heritage tourism experiences: A conceptual model"	Bec, A; Moyle, B; Timms, K; Schaffer, V; Skavronskaya, L; Little, C.	Tourism Management	2019	46
"Geoinformatics for the conservation and promotion of cultural heritage in support of the UN Sustainable Development Goals"	Xiao, W; Mills, J; Guidi, G; Rodriguez-Gonzalvez, P; Barsanti, SG Gonzalez-Aguilera, D.	Isprs Journal of Photogrammetry and Remote Sensing	2018	46
"Evaluation of the recreational potential of Kütahya Urban Forest"	Cetin, M; Sevik, H; Canturk, U; Cakir, C.	Fresenius Environmental Bulletin	2018	43
"Co-creating the city: Digital technology and creative tourism"	Marques, L; Borba, C.	Tourism Management Perspectives	2017	27
"Augmented reality in the tourism industry: A multi-	Serravalle, F; Ferraris, A; Vrontis,	Tourism Management Perspectives	2019	27

stakeholder analysis of museums”	D; Thrassou, A; Christofi, M.			
“eTourism: ICT and its role for tourism management”	Pierdicca, R; Paolanti, M; Frontoni, E.	Journal of Hospitality and Tourism Technology	2019	26
“Metadata-based heritage sites modeling with e-learning functionality”	Styliadis, AD; Akbaylar, II; Papadopoulou, DA; Hasanagas, ND; Roussa, SA; Sexidis, LA.	Journal of Cultural Heritage	2009	26
“Google Earth as a powerful tool for archaeological and cultural heritage applications: A review”	Luo, L; Wang, XY; Guo, HD; Lasaponara, R; Shi, PL; Bachagha, N; Li, L; Yao, Y; Masini, N; Chen, FL; Ji, W; Cao, H; Li, C; Hu, NK	Remote Sensing	2018	23
“Virtual 3D tour of the Neogene palaeontological heritage of Huelva (Guadalquivir Basin, Spain)”	Gonzalez-Delgado, JA; Martinez-Grana, AM; Civis, J; Sierro, FJ; Goy, JL; Dabrio, CJ; Ruiz, F; Gonzalez-Regalado, ML; Abad, M.	Environmental Earth Sciences	2015	23

Table 10 shows the top ten most cited studies on "Cultural Heritage Tourism and Digital and Digitalization". Studies on “Cultural Heritage Tourism and Digital and Digitalization” are separated according to “publication name, author name, source of publication, year of publication and number of citations”. The most cited publication among scientific publications has been “A virtual tour of geological heritage: Valourising geodiversity using Google Earth and QR code?” by the authors “Martinez-Grana, AM; Goy, JL; Cimarra, CA” published by “Computers & Geosciences” journal.



Web of Science (Date of Access: February, 24, 2022).

Figure 1. Distribution of Publications and Citations of Scientific Studies on “Cultural Heritage Tourism and Digital and Digitalization” by Years

It is seen in Figure 1 that the first study on "Cultural Heritage Tourism and Digital and Digitalization" in the web of science database was in 2004 and the first citation was in 2010. At the same time, the first citation on the subject was made in 2010 and there were 7 of them. In addition, it was determined that there were a total of 975 citations on the subject between 1975-2021. Considering Figure 1, the most publications were in 2019 (50 publications) and the highest number of citations were made in 2021 (266 citations). In 2022, it is concluded that 29 citations and 2 publications have already been made.



Figure 2. Keywords Network for Studies on “Cultural Heritage Tourism and Digital and Digitalization”

In the VOSviewer program, it was determined that 863 keywords were used in the publications on "Cultural Heritage Tourism and Digital and Digitalization". Figure 2 shows 22 keywords that were used at least 5 times out of 863 keywords in the related publications. According to Figure 2, it is seen that the most used keywords are “cultural heritage”, “cultural tourism”, “augmented reality”, “tourism” and “digital heritage”. In addition, it is seen that the keywords used in the studies in this field form 5 clusters. Each of these clusters can be seen in rings of different colors and sizes.

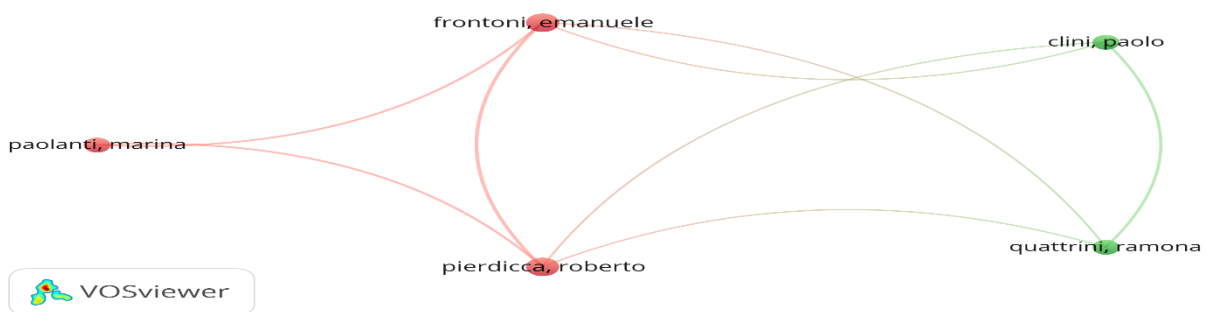


Figure 3. Network Map of Top Collaborating Authors

The number of documents related to the authors of the publications on "Cultural Heritage Tourism and Digital and Digitalization" was determined as a minimum of 2, and 40 of the 764 authors in total met the threshold value. The network map of the five most collaborating authors is visualized in Figure 3. In the studies on "Cultural Heritage Tourism and Digital and Digitalization", two clusters for authors were obtained. These clusters are visualized in red and green colors and the cluster includes authors named “Marina Paolanti, Emanuele Frontoni, Roberto Pierdicca, Paolo Clini and Ramona Quattrini”.

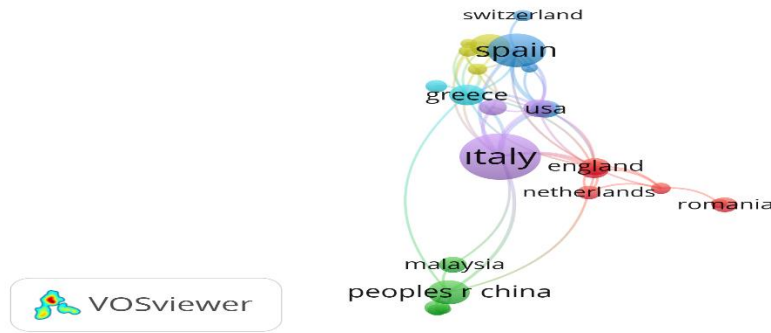


Figure 4. Network Map of the Most Collaborating Countries

In order to identify the countries with the highest cooperation in the program, the minimum number of documents has been determined as 3. In this direction, 30 of the 62 countries in total meet the threshold value. The information on the countries that have the most cooperation in the studies on the subject of "Cultural Heritage Tourism and Digital and Digitalization" is given in Figure 4 as 6 clusters. According to Figure 4, "Austria, England, Montenegro, Netherlands and Romania" are in the first cluster, "Australia, Malaysia, China, South Korea and Taiwan" are in the second cluster, "Brazil, Spain, Switzerland and America" are in the third cluster, "Cyprus, Finland, Portugal and Sweden" are in the fourth cluster, "France, Italy and Russia" are in the fifth cluster and "Greece and Turkey" are in the sixth cluster. Looking at Figure 4, it can be said that Italy in the largest purple ring is the country that cooperates the most.



Figure 5. Network Map of Top Collaborating Institutions

The number of documents was determined as at least 3 in order to determine the institutions that cooperated the most on "Cultural Heritage Tourism and Digital and Digitalization", and 17 of 374 institutions in total met the threshold value. As seen in Figure 5, the institution that cooperated the most was "Sapienza University-Rome", which is shown in green.



Figure 6. Network Map of Most Cited Documents

While determining the network map of the most cited documents, the number of citations in the documents was determined as at least 5. Accordingly, 57 out of 251 documents met the threshold value. According to Figure 6, the most cited document is in the big green circle with 52 citations by Martinez-Grana, AM; Goy, JL & Cimarra, CA (2013).



Figure 7. Network Map of Most Cited Resources

The number of documents related to the most cited sources was determined as at least 1 and the number of citations as at least 5. Accordingly, 50 of the 189 resources in total met the threshold value. The journal "Computer & Geosciences", located in the largest green circle in Figure 7, is the most cited journal with 52 citations. This journal is followed by the journal of "Tourism Management" with 46 citations.



Figure 8. Network Map of Most Cited Authors

When the number of documents and citations of the authors is determined as at least 1, it is seen that 494 out of 764 authors met the threshold value (see Figure 8). The most cited authors in the VOSviewer program emerge as thirteen clusters. Each of these clusters is visualized in a different color, with the most cited author being “José Luis Goy” with 75 citations in the largest purple ring.



Figure 9. Network Map of Most Cited Institutions

In Figure 9, information about the institutions most cited in scientific publications on cultural heritage tourism and digitalization is visualized. When the number of documents and citations of institutions is determined as at least 1, 234 of 374 institutions in total meet the threshold value. It is seen that the institutions with the most cited authors are five clusters and each cluster is in a different color. “University of Salamanca” is the most cited institution with 131 citations and is in the largest red circle.

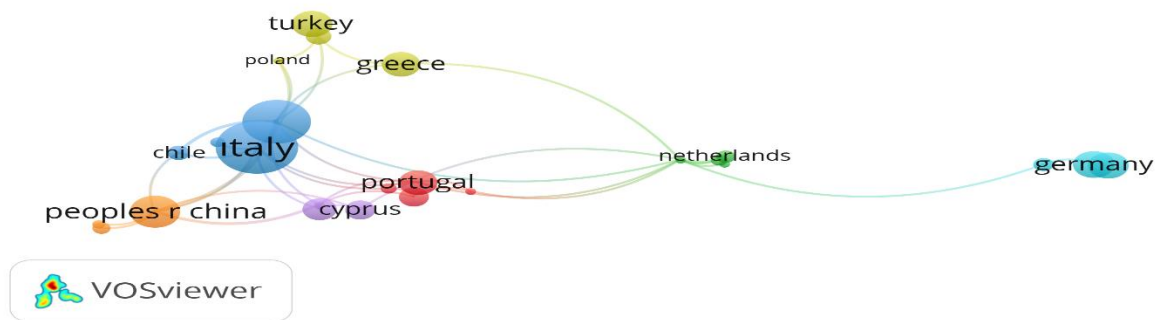


Figure 10. Network Map of Most Cited Countries

Figure 10 contains information about the countries most cited in scientific publications on cultural heritage tourism and digitalization. When the number of documents and citations of the countries was determined as at least 1, 48 out of 62 countries met the threshold value. The country with the highest number of citations (295 citations) is “Italy” in the largest blue ring. Turkey, on the other hand, is in the largest yellow ring with 72 citations.

DISCUSSION

Digitalization, which has developed due to the rapid progress of technology, has started to be used in the service sector as well as in the production sector. Tourism constitutes an important pillar of the service sector, and the digitalization of tourism allows the resources to be used effectively and the future to be safe (Erkmen & Gönenç Güler, 2020). The internet environment, which provides uninterrupted information flow, is of great importance especially for the tourism sector (Wang & Xiang, 2012). Because tourists can make pre-visit planning, get to know the city and create an effective travel route for themselves. Digitalization provides opportunities such as perceiving the demands of potential guests, providing them with more information and reaching more people through the goods and services offered (Pabel & Prideaux, 2016). Using the digital system improves the tourism experience. At the same time, it affects sustainability by providing both consumer satisfaction and competitiveness (Buhalis & Amaranggana, 2014).

With digitalization, it is seen that competition is now taking place on digital platforms rather than traditional areas. Therefore, destinations and businesses are expected to leave the local and reach global dimensions. As a matter of fact, the existence of a platform where visitors can share their experiences, their photo and video sharing and their comments can become viral in a very short time. Therefore, the fact that these shares come to the fore in the decision processes of the visitors and that almost every segment can easily access these shares reveals the importance of digitalization (Göymen & Yıldız, 2021).

Cultural heritage tourism is a phenomenon that includes the exhibition and preservation of traces from the past to the present. Therefore, digitalization is an important dimension in this case. Because it includes some initiatives for the protection of all cultural heritage values and for the benefit of future generations. Heritage items are rapidly digitized in order for future generations to benefit from existing cultural heritage areas and ensure the sustainability of these areas, and in this sense, items are digitized and transferred to the virtual environment. Therefore, a sustainable certification is provided (Cirulisa et al., 2015). In this context, many countries have started to carry out various projects for the protection and development of cultural heritage with digital technologies. These developments have increased the importance of digitalization for cultural heritage elements. It is also known that the relationship between cultural heritage elements, which have just kept up with the new digital world, and digitalization is on an increasing scale. In addition, the existence of studies conducted within the scope of the subject also supports this relationship (Melchior, 2019).

CONCLUSION AND RECOMMENDATIONS

Despite the rapidly advancing technology around the world, the digitalization process of cultural heritage elements is progressing more slowly. In this study, which was evaluated in line with the data obtained from the Web of Science database, it is seen that there is a digitalization process that emerged with the support of computer programming. It can be considered, for the recent past, as a negative situation not to give enough importance to these studies and not to make any publications on the subject in some years especially in the international literature. Again, based on the research findings, it is noteworthy that the issue of digitalization is more discussed in countries where tourism is intense. Also the relationship between digitalization and cultural heritage tourism is in a position that we can call new (Demirel İli & Hazarhun, 2021). However, it can be said that the interest in these two issues is increasing. As a matter of fact, research findings also support this opinion. Within the scope of the research, it is aimed to reach the studies on the subjects of "Cultural Heritage Tourism and Digital and Digitalization" in the Web of Science database.

As a result of the systematic and comprehensive search made in the web of science database, a total of 264 publications published between 1975-2021 were reached. It is possible to say that the studies on this subject gained momentum in 2015 and the number of publications has an increasing trend since this period compared to previous years. In other words, it can be said that the researchers' interests in the subject are increasing with each passing year.

When the publication type of the studies on "Cultural Heritage Tourism and Digital and Digitalization" is examined, it has been determined that the most publications are in the types of articles and papers. The language used in the majority of the studies carried out within the scope of the subject is English. When the

countries that contributed the most to the publications have been examined, it has been revealed that these countries are Italy, Spain and China, respectively. It is striking that Turkey is in the seventeenth place with 5 publications.

The publishing house with the highest number of publications in the studies on "Cultural Heritage Tourism and Digital and Digitalization" has been determined as "Springer Nature". At the same time, the most cited work about the topic has been determined as "A virtual tour of geological heritage: Valourising geodiversity using Google Earth and QR code?" by Martinez-Grana, AM; Goy, JL and Cimarra, CA in 2013.

Another finding obtained within the scope of the study is about the keywords used in the studies. A total of 863 keywords used within the scope of the subject have been reached. It is seen that the most used ones among these keywords are "cultural heritage", "cultural tourism", "augmented reality", "tourism" and "digital heritage", respectively. Considering the keywords used, it can be said that the subjects of augmented reality and digital heritage are handled more frequently within the scope of cultural heritage tourism compared to other digitalization subjects. In addition, it has been determined that the authors who collaborated most in the studies on "Cultural Heritage Tourism and Digital and Digitalization" are "Marina Paolanti, Emanuele Frontoni, Roberto Pierdicca, Paolo Clini and Ramona Quattrini". Furthermore, according to the results of cooperation between countries, it has been concluded that Italy and Spain cooperate more than other countries, just like the number of publications. Therefore, it is possible to say that the studies on "Cultural Heritage Tourism and Digital and Digitalization" are based in Italy and Spain and that the publications from these countries direct the studies in the related field.

Digitalization applications in the tourism industry should be carried out before the tourist density and destruction occurs. With the inclusion of virtual museums and city tours in tourism activities that could not be realized during the global epidemic period, the importance of digitalization in tourism for the effective use of resources has begun to be understood more. In this context, it is thought that digitalization should be ensured in order to protect and sustain cultural heritage tourism. Therefore, digitalization in cultural heritage tourism should be integrated with the field of archaeology, computer engineering and art history as understood from the studies in the international literature. The research was conducted in the web of science database, and the use of only this database constitutes the limitation of the research. Therefore, it is suggested that future studies should investigate by including other databases. Because this will enable to look at the subject from a wider perspective and provide an opportunity for comparison with previous studies of this kind. The repetition of bibliometric studies on "Cultural Heritage Tourism and Digital and Digitalization" at regular intervals and their re-examination within the framework of different parameters will provide important information about the changes in the development course of the field and the gaps in the field. It is also suggested that the keywords used within the scope of the research should be differentiated and dealt with by associating cultural heritage tourism with other issues of digitalization. In this context, it is thought that digitalization in cultural heritage tourism will provide information on which areas are more integrated and which areas are less integrated. The use of the VOSviewer program within the scope of the subject and the idea that the program can give the best visual results regarding this analysis are considered as an assumption. Therefore, it is suggested that future studies can reveal current perceptions and attitudes towards cultural heritage tourism and digitalization and future expectations by using different research methods and techniques. Finally, it is suggested that all stakeholders who have a say in destination management should increase the number of investments and projects for the protection of cultural heritage elements that are the subject of tourism, in communication with each other. In addition, it is expected that these investments and projects will cover the works for the protection of cultural heritage elements through digitalization.

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EXTENDED SUMMARY

Cultural heritage tourism, which is an alternative type of tourism arising from the sharing of the hidden stories of each destination's society, past life, historical places and cultural traditions with the visitors, can be defined as traveling to experience places, artifacts and activities that authentically represent the people and stories of the past (ACHP, 2002) in short.

Cultural heritage tourism has been frequently researched in national and international literature since it was introduced in the 2000s. Especially with the developments in information technologies in recent years, the digitalization of cultural heritage has gained widespread application in tourism and has been reflected in the literature on the subject (Abdo, 2019; Bilgiçli, 2021; Cameron & Kenderdine, 2007; De Bernardi et al., 2019; Hemsley et al., 2017; Kordha et al., 2019; Korkmaz, 2021; Mannas et al., 2013; Nacak, 2020; Zamyatina & Solntseva, 2022). The importance of preserving cultural heritage is clear, as it strongly influences knowledge, identity, behavior, commitment and beliefs. Digitalization comes into play at this point and plays an active role in both the promotion and protection of cultural heritage. The potential offered by digital technologies at the point of protecting valuable heritage elements that are under threat all over the world today results in the R&D processes of various digitalization tools to serve cultural heritage tourism through various projects and products. Especially with the pandemic, travel restrictions and isolation policies have caused the travel preferences and plans of most of the tourists to change, and digitalization through artificial intelligence or 3D visualization in the field of cultural heritage has made it possible to experience these elements (Ren & Chen, 2021). Digitalization in destination marketing increases its impact day by day and expands the touristic market share of cities (Erkmen & Gönenç Güler, 2020). Therefore, considering that digital cultural heritage elements play an active role in attracting new tourists who have visited before or are considering to visit the destination, the importance of digitalization in the field of cultural heritage tourism is better understood.

The research focused on the phenomenon of cultural heritage tourism and digitalization, and the phenomenon of cultural heritage tourism and digitalization was examined with a holistic perspective, examining the studies (articles, books, papers, etc.) in the international literature between 1975-2021 within certain parameters and subjecting them to bibliometric analysis. In order to access scientific studies on cultural heritage tourism and digitalization, on February 22, 2022, "Cultural Heritage Tourism and Digital and Digitalization" was written in the Web of Science (WOS) database and a detailed search was made in the "topic" tab. As a result of the searches made as specified, a total of 264 scientific publications on "Cultural Heritage Tourism and Digital and Digitalization" were found. All publications were classified according to many criteria such as "number of publications, publication types, publication years, authors, countries, languages, research areas, places of publication, citations, institutions" and the data obtained were tabulated. In addition, "the most collaborating authors, institutions, countries, the most used keywords, the most cited authors, documents, resources and countries" were subjected to bibliometric analysis in the VOSviewer program.

A total of 264 publications were made on the subject of "Cultural Heritage Tourism and Digital and Digitalization". The first publication was made in 2004, and no study was found in 2003 and before. The most research on the subject was carried out in 2019, and a total of 50 scientific publications were made. It is seen that the publications are in the types of "articles, papers, early access, review articles, editorial and book chapters". The most publication types are articles with 158 publications, and the country with the highest number of publications is Italy with 68 publications. Turkey is in the 17th place with 5 publications. Of the 264 studies, 236 were written and published in English. It is seen that the "Springer Nature" publishing house is in the first place with 26 publications. The largest number of studies on the subject is in the field of computer science with 47 publications. Among the studies published in 71 different categories, "Accommodation, Leisure, Sports and Tourism" is the category with the highest number of studies. It has been concluded that a total of 292 authors conduct studies on the subject. Piscitelli, M. takes the first place with 5 publications. There are 255 institutions making different publications within the scope of the subject in the Web of Science database. Consiglio Nazionale Delle Ricerche (CNR) ranks first with 6 publications. The most cited scientific publication is "A virtual tour of geological heritage: Valourising geodiversity using Google Earth and QR code?" by Martinez-Grana, AM; Goy, JL; Cimarra, CA" published by "Computers & Geosciences" journal. It is seen that the first study on this subject was in 2004, and the first citation was in 2010. At the same time, the first citation to the subject belongs to 2010. Between 1975 and 2021, it was determined that there were a total of 975 citations on the subject. The most publications were in 2019 (50 publications) and the highest number of citations were in 2021 (266 citations). It was determined that a total of 863 keywords were used in the publications. It is seen that the most used keywords are "cultural heritage", "cultural tourism", "augmented reality", "tourism" and "digital heritage". It can be said that Italy is the country that cooperates the most. The institution that has cooperated the most is "Sapienza University-Rome". The most cited document belongs to co-authors, "Martinez-Grana, AM; Goy, JL & Cimarra, CA (2013)" with 52 citations. The journal "Computer & Geosciences" is the most cited journal with 52 citations. The most cited author is seen as "José Luis Goy" with 75 citations. The most cited institution in scientific publications on cultural heritage tourism and digitalization is the University of Salamanca with 131 citations. The most cited country is "Italy" with 295 citations. Turkey has 72 citations. In this study, the current status and development level of international studies within the scope of cultural heritage tourism and digitalization have been determined and it is thought that it will guide the researchers who will work on this subject.