

Relevance of Place Attachment towards Sustainability in Tourism: A Bibliometric Analysis

Arun Bhatia

Central University of Himachal Pradesh,
India
arunbhaticuhp@gmail.com

Umesh Kumar

Central University of Himachal Pradesh,
India
umeshhp1996@gmail.com

Saurabh Kumar

Central University of Himachal Pradesh,
India
saurabhverma7870@gmail.com

Divyam Sharma

Central University of Himachal Pradesh,
India
divyampandit@gmail.com

Sustainability is a core and primary outcome of place attachment studies, an increasingly popular research topic in the tourism industry. It is a significant concern in daily life because of social and environmental issues and the need to preserve legacy and facilities to maintain tourism destinations. In this study, the Scopus database and keywords related to place attachment, sustainability, and tourism were used to identify the papers. The result revealed that 720 papers were found in the Scopus database from 1988 to 2023. After filtering the data, only 448 papers were included for further analysis. In this study, authors use the bibliometrics analysis technique, vosviewer, and rstudio software to quantify and visualise the existing literature on place attachment and sustainability and evaluate the main overview of the research summary. This study aims to present a bibliometric overview of place attachment towards sustainability in tourism research. The study employed co-occurrence of keywords, most prolific authors, most cited countries, most cited articles, and co-authorship by country analyses. The findings show significant growth in the field of place attachment and sustainability research, including authors, significant journals, research papers, and countries.

Keywords: place, place attachment, sustainability, tourism, bibliometric analysis



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Introduction

Sustainability has garnered growing interest in travel and tourism, which is accepted as a primary sector globally with the potential to significantly contribute towards sustainable development of regions (Powell & Ham, 2008). Tourism, with its activities, has boosted residents' standard of living with increased income, generating employment, attracting business owners, enhancing infrastructure, preserving cultural significance, and fostering cross-cultural exchange (Ji et al.,

2015; Mathew & Sreejesh, 2017; Wang & Chen, 2015). However, beyond financial advantages, tourism-related activities negatively impact the environment's ecological system (Pan et al., 2018). Climate change-related issues have become a global concern (Zhang & Zhang, 2020). The development of tourism has many adverse effects, as noted by academics, including rising living expenses (Rasoolimanesh et al., 2015), environmental damage (Badola et al., 2017), and uneven distribution of tourism earnings (Alam & Paramati,

2016). Tourism cannot exist without travel, and there is a close relationship between sustainable mobility concepts and sustainable tourism (Høyer, 2000). Previous studies suggest that human activity is the main factor contributing to environmental deterioration (Halpenny, 2010; Kurz, 2002). Carbon emissions have been steadily increasing daily; recently, data published by Nature Climate Change show that tourism contributes 8% of all greenhouse gas emissions from transport and food consumption. Tourism-related carbon emissions total nearly 4.3 billion metric tonnes (Lenzen et al., 2018). Thus, an appropriate kind of tourism must be developed to attain long-term sustainability. Developing a sustainable tourism destination requires maximizing profit and reducing cost while fulfilling the needs of tourists with effective decision making (Cottrell et al., 2013; López et al., 2018). However, researchers argue that little attention has been paid to this significant research subject, making it challenging to reach conclusive findings regarding how, why, and what circumstances promote place attachment towards sustainable behaviour (Scannell & Gifford, 2010b). Further, there is a shortage of literature investigating the relationship between place attachment and environment-related studies (sustainability), which is scattered, fragmented, and 'disorganised' (Jorgensen & Stedman, 2001), and understanding its importance has been an area of interest for academicians in multiple domains of tourism in recent times (Aytekin et al., 2023; Zhou et al., 2023). Within the tourism discourse, a highly acknowledged parallel to UN Sustainable Development goals brings a clear direction towards creation of low-carbon communities with active community participation (Lu, Lu et al., 2023), an initiative towards place attachment. Similar actions play a crucial role in achieving sustainability in tourism. Place attachment is a central study issue in environmental psychology and tourism literature, encompassing the positive affective connections between individuals and their socio-physical surroundings (Strzelecka & Boley, 2017). For this purpose, a bibliometric analysis was carried out on published papers in the Scopus database. According to the World Commission on Environment and Development, the definition of sustainability was developed in 1987, while in a search in

the Scopus database, the first paper referring to the terms 'place attachment' and 'sustainability' appeared in 1988. Therefore, the time range selected for this research covers the period from 1988 to 2023 which further helps to give an overview of the trends and applicability of the domain. The intricate understanding of the same led to the following research questions:

RQ1. What is the volume of published articles on the issue of place attachment and sustainability in tourism?

RQ2. Which publications, authors, and research articles significantly impact place attachment and sustainability in tourism?

RQ3. What is the relationship among topics in terms of the co-occurrence of keywords?

Analysing the outcomes will aid in developing research plans. The study findings will contribute to the progress of the field by identifying and analysing publications and emerging trends.

Review of Literature

Place

Discussions on place attachment make it challenging to differentiate between the 'space' and 'place'. Space is a fundamental part of the natural world, with abstract qualities not subject to cultural interpretation (Gieryn, 2000). Space becomes place with an interaction of humans in space, giving places certain features, meanings, and values (Gieryn, 2000; Tuan, 1977, p. 6). Recently, place-related research has gained more attention, especially in environmental psychology and management, as many highlighted environmental issues that are endangering places are significant to people and society (Sanders et al., 2003). In terms of the recreation and tourism perspective, it has also come from an idea that places serve as destinations for the experiences of visitors, which is another reason for leisure and tourism research to be motivated to undermine the ideas of tourist, tourism and place attachment (Snepenger et al., 2007) and establish a framework using social and psychological aspects designed using people's interactions with places. Adams et al. (2013), Agyeman and Evans (2004), and Tuan (1977) assert that people have emotional bonds and form strong emotional connections with place, repre-

Table 1 Definition of Place Attachment-related Concepts Across Academic Fields

Terminology	Disciplines	Definitions	References
Topophilia	Geography	'Affective bond between people and place or settings.'	Tuan (1974, p. 4)
Sense of place	Sociology	'People's subjective perceptions of their environments and their more or less conscious feelings about those environments.'	Hummon (1992, p. 254)
Sense of place	History/landscape studies	'Something that we create over time, the result of habit or custom.'	Jackson (1994, p. 151)
Place attachment	Anthropology	'Symbolic relationship formed by people giving culturally shared emotional/affective meanings to a particular space of a piece of land that provides the basis for the individuals' and groups' understanding of, relation to, and bonding with the environment.'	Altman and Low (1992, p. 165)
Place attachment	Environmental Psychology/ Geography	'A complex, multivalent, dynamic experience based on the complex process of place.'	Seamon (2014)

Source: Chen et al. (2021).

sented in a range of meanings, values, and emotions connected to a particular area. Numerous researchers suggest the necessity of place attachment and place-related concepts (Brehm et al., 2013; Scannell & Gifford, 2010a, 2010b).

Place Attachment

Place attachment is a growing and vital concept in leisure and tourism literature (Prayag et al., 2018), emerging from attachment theory (Bowlby, 1969, 1973) and widely studied globally. According to Milligan (1998) and Wiles et al. (2009), attachment theory has been utilised as a construct in various social settings. For an individual, the environment includes one's local community (Brown et al., 2003; Lewicka, 2010) and other destinations (Garrod, 2009; Morgan, 2010). In the 1980s, place attachment as a concept was first introduced in the tourism domain (Tsai, 2016), with the 1990's showcasing better clarity. Later, place attachment is described as a connection between a person and a place built on feeling, cognition, and practice. Theoretical and empirical studies have supported a similar notion, widely acknowledged by researchers (Williams & Roggenbuck, 1989) and encompassing various similar concepts and terms related to the human-environment relationship, including

'topophilia', 'place identification', 'insidedness', 'genres of place', 'sense of place', 'environmental embeddedness', and communal feeling (Altman & Low, 1992).

Place attachment is a term used to characterise an individual's connection, which is an outcome of an attachment measured towards an emotional, cognitive, and functional level for a place or a region (Lin & Lee, 2019), as well as their psychological locality (Scannell & Gifford, 2010b). The investigation of human-land interactions is crucial because place attachment is an outcome of a strong and positive emotional bond with a place (Dwyer et al., 2019). It creates an emotional bond between people and the physical environment (Hidalgo & Hernandez, 2001; Altman & Low, 1992) and encompasses person, process, and place dimensions – the 'tripartite model of Place attachment' (Scannell & Gifford, 2010a). Researchers acknowledge that place attachment is a complex concept (Chen & Dwyer, 2018; Eusébio et al., 2018; Scannell & Gifford, 2010a). The literature on place attachment provides a clear overview where place attachment cannot be measured as a unidimensional construct to undermine the concept. Still, an analytical multi-dimensional construct comprising of place attachment using place identity, place dependence, place affect, and place social bonding, provides better understanding of its establishment

of links with other constructs (Chen et al., 2018; Eusébio et al., 2018, Ramkissoon et al., 2013). It is also an essential factor affecting individuals' attitudes, emotions, and behavioural intentions towards a particular community or environment (Lewicka, 2011). The notion of place attachment, rooted in environmental psychology, is a significant concept reflecting complex meanings that both visitors and locals assign to their physical surroundings. Place attachment is an essential concept for understanding and measuring the behavioural intentions of both visitors and residents (Chen et al., 2014a, 2014b, 2015; 2018; Chen & Dwyer, 2018; Hosany et al., 2017; Lee et al., 2012; Tsai, 2012). Ramkissoon et al. (2013), and Xu and Gursoy (2020) emphasise that place attachment is a crucial antecedent for understanding behaviour among individuals. For this reason, place attachment is considered a factor influencing sustainable behaviour in the current study.

Sustainability

The World Commission on Environment and Development (United Nations, 1987) defines sustainable development as 'a process to meet the needs of the present without compromising the ability of future generations to meet their own needs'. The term 'sustainability' includes various approaches to maintaining equilibrium among economic, social, and ecological concerns (Purvis et al., 2019). UNESCO also proposed that to create 'cities and human settlements [that are] inclusive, safe, resilient, and sustainable', it would be essential to reinforce them with specific regulations, as mentioned in Goal 11 of the Sustainable Development Goals (SDGs) of the United Nations 2030 Agenda (Jaramillo, 2020, p. 99). Industry stakeholders believe tourism may contribute to sustainable development and catalyse conservation and environmental preservation (United Nations, 1999). Tourism development acknowledges and includes positive and negative consequences (Archer, 2005; Hunter & Green, 1995; Ryan, 1991). According to Walker and Chapman (2003), knowledge of a place may help individuals feel more connected to it, showcasing protection and caring about the places (Relph, 1976). To better comprehend the relationship between humans and the natural environment, Lewicka (2011) proposed

rethinking the concept of 'place attachment' and taking a more sophisticated look at human emotions concerning physical surroundings. Place attachment has become a powerful instrument for promoting sustainable development and environmental conservation (Fresque-Baxter & Armitage, 2012). Travellers travelling to choose-based travel place more deep attachment to destinations with an active role in environmental preservation (Chiu et al., 2014; Fairweather et al., 2005; Walker & Ryan, 2008). Environmental Responsibility Behaviour (ERB) encompasses activities like voluntarily collecting litter (Halpenny, 2006; Walker & Chapman, 2003), classifying trash, preserving water (Vaske & Kobrin, 2001), acting to prevent illegal ecological harm (Stedman, 2002), responsibility towards advancing science, and safeguarding the environment as well as natural resources (Gosling & Williams, 2010; Halpenny, 2010; Scannell & Gifford, 2010a, 2010b). Ramkissoon et al. (2012), with research in an Australian national park, point out that visitors' emotional connection to a place positively influences their ecologically responsible actions. The global economic recession brought on by the COVID-19 epidemic and the ensuing place stagnation made people rethink how people and place interact as well as place, emphasise the critical connections between health, and well-being (Masterson et al., 2019). The competitive environment of the tourism business, particularly the travel sector, is significantly influenced by the advancement of information and communication technologies (Avilas Hernández et al., 2023). In addition, it is imperative to establish a sustainable travel infrastructure in order to ensure long-term financial stability with an aim to create profitable, stable, and resilient tourism systems (Gössling et al., 2016) to maximise its economic benefits (Biggs et al., 2012). Communities with a strong sense of place attachment are more capable of effectively managing hazards such as climate change, resource depletion, and social problems, encouraging behaviours and practices that promote sustainability objectives, such as social fairness and economic success (Razem & El Kaftan-gui, 2020), with an increase of the community's resilience, assisting it while overcoming obstacles related to the environment, society, and economy and pro-

moting overall sustainability (Lu, Zhang et al., 2023). The emotional bond encourages responsibility and concern for the local environment, which results in the local population's great affinity for rural landscape acting as a strong motivation to participate in land conservation and preservation efforts, thus enhancing the sustainability of rural areas and economies (Yang et al., 2021). Understanding and implementing components that enhance place attachment can help with sustainable urban planning and design, enhancing a place's overall sustainability (Hacıoğlu & Polatoğlu, 2023). Kukanja and Planinc (2023) suggested that sustainable practices at the destination are also the result

of eliminating societal barriers with equitable inclusion of persons with disabilities. However, most issues are related to ecologically irresponsible human activity (Hopkins, 2020; Xu & Gursoy, 2020). Thus, when visitors establish a sense of place attachment to a destination, they become attached to the destination and acquire identity by relying on the place and showing towards sustainability.

Methodology

Data Collection

Web of Science and Scopus are the most popular and trustworthy databases (Garrigos-Simon et al., 2018).

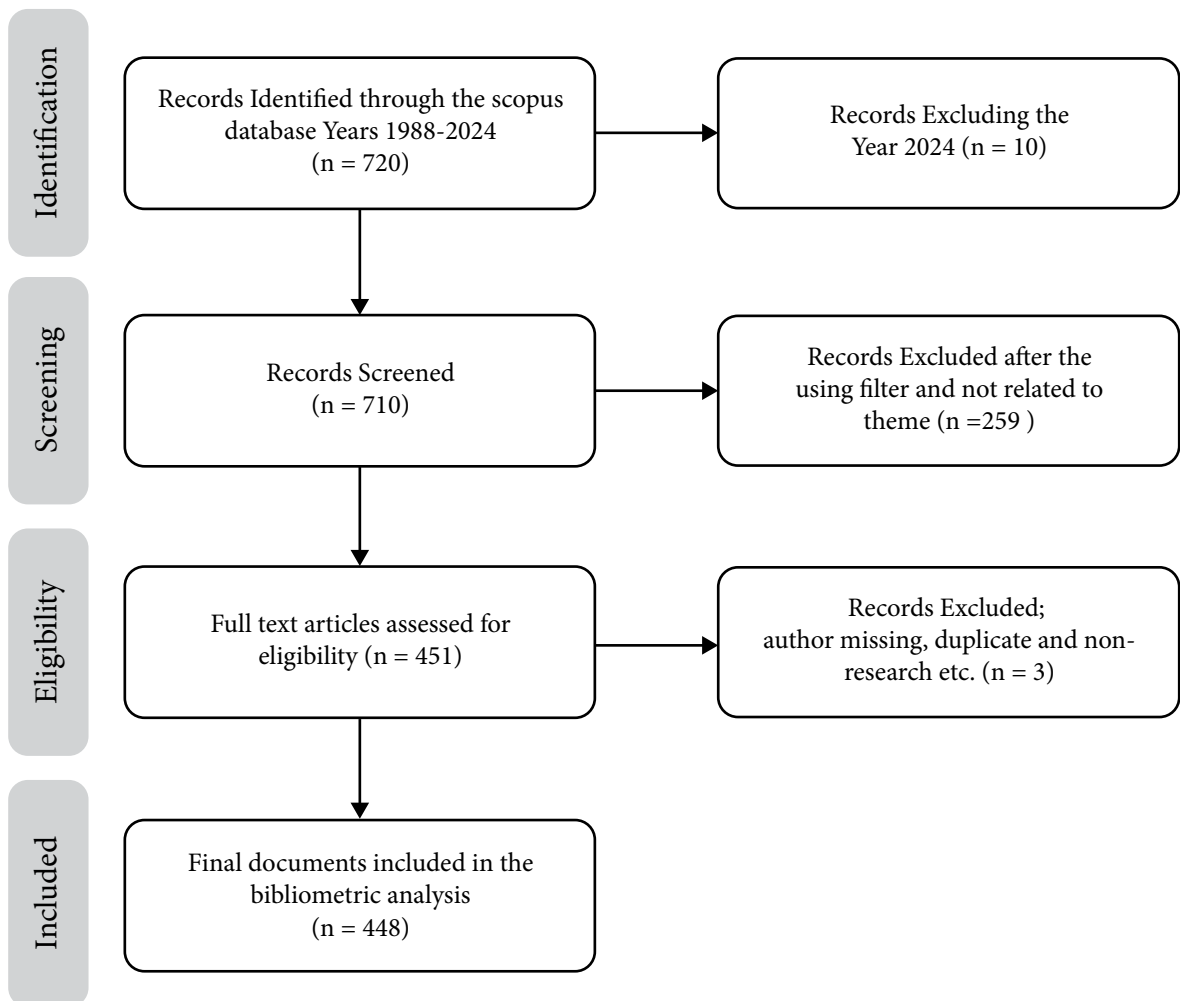


Figure 1 PRISMA Framework

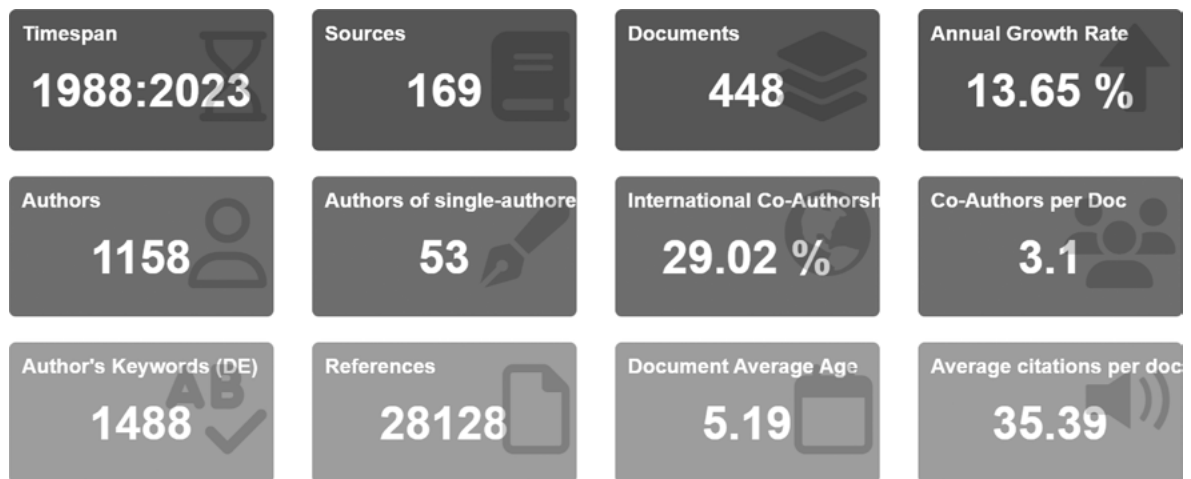


Figure 2 Main Information about Place Attachment and Sustainability in Tourism

In the current study, data was retrieved from only the Scopus database. The identification of keywords to find the relevant research papers is the most important step in bibliometric analysis.

Data Analysis

A research methodology known as 'bibliometric analysis' employs bibliographic data as the primary source of material and is predicated on the notion of bibliometrics. The analysis technique for analysing literature holds the power to showcase academic progress both statistically and objectively. It has gained extensive use across numerous study domains. Bibliometrics is a quantitative analytic technique that uses methods based on statistics and mathematics to evaluate the significance and value of a research paper within a particular subject area (Santos-Rojo et al., 2023) with where more comprehensive and detailed analysis of the knowledge acquired throughout time. Based on the initial finding, a more accurate way to determine the sample database was adopted, and the PRISMA framework was taken as the right kind of approach in a similar situation developed by the researchers (Moher et al., 2010). On February 12, 2024, we conducted a search in the Scopus database using such keywords as "place attachment" and "sustainability" or "tourism". These keywords were used as a search item combined with the Boolean operators "AND" and "OR" in the title section of the articles in order to find more ac-

curate articles that met the study objectives. The bibliographic archive produced records of more than 720 articles from different subjects. 10 articles from 2024 were excluded because the study is still in progress. To find accurate documents, using a filtering process, only English articles (1988–2023) from social sciences, environmental sciences, arts and humanities, and multidisciplinary fields were included in the data, and 259 unrelated articles were excluded. After the filtering process, 3 documents were also removed due to missing authors and duplicates. Following Boolean operators and filters, 448 bibliographic resources obtained are examined in this study. The extracted records support the bibliometric study and are based on the visualisation of similarities method. Later, it led to extracting and exporting the data to a csv file, including results, abstracts, bibliographical data, citations, keywords, and other significant information.

Results

Information of publication records

The current research paper's analysis is based on publications in journals included in the Scopus database from 1988 to 2023. Only the Scopus database till 2023 is included, and the year 2024 is excluded since the study is still in progress and it is impossible to estimate the precise number of research papers. The sample included 448 papers generated by 169 journal sources, and 1,158 authors from 90 different countries

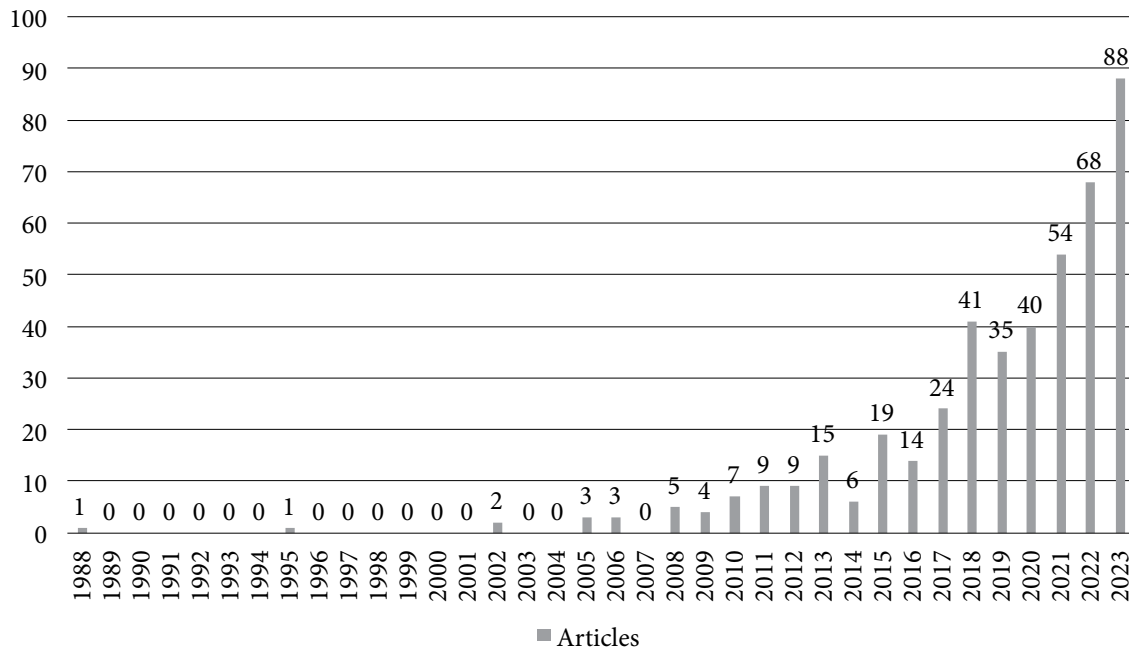


Figure 3 Annual Production of the Place Attachment and Sustainability Research Articles

contributed to the work. There are only 53 articles written by a single author, while 1,105 authors contributed to collaborative writing (Figure 2).

An Overview of Research Publications on Place Attachment and Sustainability

The analysis of existing literature shows that research on place attachment and sustainability expe-

rienced minimal activity between 1995 and 2004. A gradual increase began in 2005, accelerating notably after 2008. Significant growth occurred from 2013 onwards, with major surges in publication volume, especially between 2020 and 2023, culminating in a peak of 88 publications in 2023. This trend reflects a clear and rapid expansion in academic interest over the past decade.

Table 2 Top Authors and Countries on Place Attachment and Sustainability

No.	Authors	TC	TP	Countries	TC	TP
1.	Ryan, C.	1,653	9	China	3,098	95
2.	Ramkissoon, H.	1,505	9	Australia	2,191	28
3.	Brown, G.	619	5	United Kingdom	1,275	34
4.	Adger, W. N.	349	5	USA	1,165	36
5.	Chen, N.	331	6	France	884	3
6.	Woosnam, K. M.	303	5	New Zealand	523	9
7.	Stylidis, D.	283	5	Israel	443	1
8.	Zhang, H.	97	7	Korea	389	21
9.	Zhang, Y.	86	6	Portugal	345	11
10.	Li, Y.	71	6	Hong Kong	327	9

Notation(s) TP = total publications, TC = total citations.

Table 3 Key Journals

Journal	TC	TP
Tourism Management	3,189	25
Journal of Sustainable Tourism	2,070	24
Journal of Travel Research	1,906	14
Sustainability	1,363	61
Current Issues in Tourism	719	23
International Journal of Tourism Research	621	11
Asia Pacific Journal of Tourism Research	531	25
Tourism Geographies	469	12
Annals of Tourism Research	189	5
Anatolia	108	6

Notation(s) TP = total publications, TC = total citations.

The statistical analysis of the existing literature revealed that publications related to place attachment and sustainability remained at a dormant stage from 1995 to 2004, but later showed substantial growth in 2005 and 2006, with publications increasing to 3 per year. The trend accelerates notably from 2008, with a total of 5 publications, and continues to grow steadily in the following years, reaching a peak of nine publications in both 2011 and 2012. The number of publications had a significant surge in 2013, starting with 15 publications, indicating a period of fast expansion. Despite a little decline to 6 in 2014, the trend quickly recovers and continues its upward path, with 19 publications in 2015. The rise has been ongoing, with significant annual increases, especially starting in 2017. In that year, the figures reached 24, followed by 41 in 2018, and 35 in 2019. In the most recent years, there has been a significant increase in publications, with the numbers rising sharply: 40 in 2020, 54 in 2021, and 68 in 2022, reaching a peak of 88 in 2023. This data demonstrates a substantial and more rapid expansion in publication activity, particularly in the past decade. The pattern highlights a shift from minimal to extensive publishing, reflecting a dynamic increase in the production of publications over time.

Top Author and Countries on Place Attachment and Sustainability

Table 2 summarises the contributions of individual authors and countries to scholarly publications based on their total citations (TC) and total publications (TP).

Among authors, C. Ryan and H. Ramkissoon stand out with the highest number of citations (1,653 and 1,505, respectively) from 9 publications each, indicating their significant influence in the respective fields. G. Brown and W.N. Adger also have substantial citations, with 619 and 349 citations from 5 publications each, respectively. Among the authors listed, Li, has the fewest citations, with 71 from 6 publications, suggesting a lesser impact compared to others. In terms of country contributions, China leads significantly with 3,098 citations from 95 publications, followed by Australia with 2,191 citations from 28 publications. The UK and USA contributions are significant, with 1,275 citations from 34 articles and 1,165 from 36 publications, respectively. France has 884 citations from 3 articles, showing a high impact per publication, whereas New Zealand has fewer publications but still has a large number of citations. Israel has only one publication yet 443 citations, signifying a very important single article. This statistic shows author and country-specific intellectual production and influence.

Table 4 Most Cited Articles with Journals

Authors	Title	Journal	TC
Prayag & Ryan, 2012	'Antecedents of Tourists' Loyalty to Mauritius: The Role and Influence of Destination Image, Place Attachment, Personal Involvement, and Satisfaction'	Journal of Travel Research	874
Ramkissoon et al., 2013	'Testing the dimensionality of place attachment and its relationships with place satisfaction and pro-environmental behaviours: A structural equation modelling approach'	Tourism Management	588
Eizenberg & Jabareen, 2017	'Social sustainability: A new conceptual framework'	Sustainability (Switzerland)	443
Hwang et al., 2005	'The relationship among tourists' involvement, place attachment and interpretation satisfaction in Taiwan's national parks'	Tourism Management	360
Gu & Ryan, 2008	'Place attachment, identity and community impacts of tourism – the case of a Beijing hutong'	Tourism Management	351
Ramkissoon et al., 2012	'Place attachment and pro-environmental behaviour in national parks: The development of a conceptual framework'	Journal of Sustainable Tourism	336
Gross & Brown, 2008	'An empirical structural model of tourists and places: Progressing involvement and place attachment into tourism'	Tourism Management	321
Lee et al., 2012	'The Mediating Effect of Place Attachment on the Relationship between Festival Satisfaction and Loyalty to the Festival Hosting Destination'	Journal of Travel Research	310
Lee, 2011	'How recreation involvement, place attachment and conservation commitment affect environmentally responsible behaviour'	Journal of Sustainable Tourism	291
Ram et al., 2016	'Authenticity and place attachment of major visitor attractions'	Tourism Management	277

Notation(s) TP = total publications, TC = total citations.

Most Cited Journals

Table 3 summarises key journals' impact on place attachment and sustainability research through total citations (TC) and total publications (TP).

Tourism Management leads in citations with 3,189 from 25 publications. The *Journal of Sustainable Tourism* follows with 2,070 citations from 24 publications, and the *Journal of Travel Research* has 1,906 citations from 14 publications. *Sustainability* has 1,363 citations from 61 publications. *Current Issues in Tourism* shows 719 citations from 23 publications, while the *International Journal of Tourism Research* has 621 citations from 11 publications. The *Asia Pacific Journal of Tourism Research* and *Tourism Geographies* have 531 and 469 citations from 25 and 12 publications, respectively. *Annals of Tourism Research* and *Anatolia* have fewer publications and lower citations, indicating lesser in-

fluence. Overall, the journals show varying levels of productivity and impact.

Most Cited Articles with Journals

Table 4 presents key scholarly articles along with their authors, journals, and total citations (TC) in the field of place attachment and sustainability.

Prayag and Ryan (2012) lead with 874 citations for their study titled, 'Antecedents of Tourists' Loyalty to Mauritius: The Role and Influence of Destination Image, Place Attachment, Personal Involvement, and Satisfaction', published in the *Journal of Travel Research*, followed by Ramkissoon et al. (2013), with an article titled 'Testing the dimensionality of place attachment and its relationships with place satisfaction and pro-environmental behaviours: A structural equation modelling approach', which has 588 citations

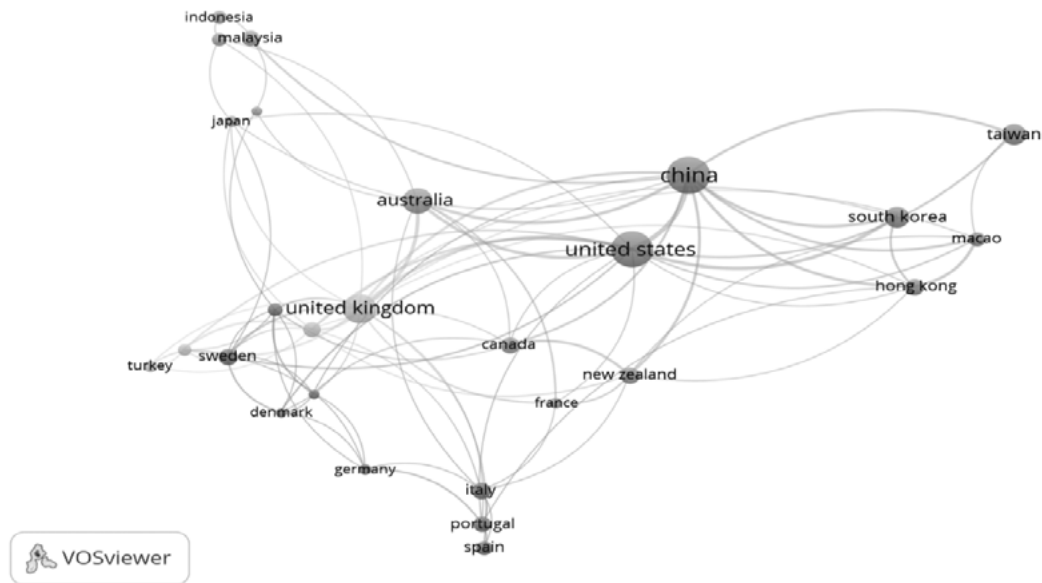


Figure 4 Co-authorship Analysis Based on Countries (vosviewer Network Visualization)

and was published in *Tourism Management*. Eizenberg and Jabareen's (2017) conceptual framework on social sustainability, published in *Sustainability* (Switzerland), has 443 citations. Hwang et al. (2005), and Gu and Ryan (2008) have 360 and 351 citations, respectively, both published in *Tourism Management*. Ramkissoon et al. (2012) have 336 citations in the *Journal of Sustainable Tourism*. Gross and Brown (2008) received 321 citations, and J. Lee et al. (2012) have 310 citations, both in *Tourism Management* and *Journal of Travel Research*, respectively. T. H. Lee (2011) and Ram et al. (2016) have 291 and 277 citations in the *Journal of Sustainable Tourism* and *Tourism Management*, respectively. This data reflects the high impact and influence of these articles in their respective journals.

Co-authorship Network by Country

Co-authorship analysis investigates the relationships among authors, organisations, or nations while working together to advance knowledge in a particular field of science (Rocio et al., 2023). As a result, co-authorship analysis identifies significant contributors and effectively evaluates collaboration trends (Hanaa & Abdul, 2024). The research objective is to exam-

ine co-authorship analysis according to nationality, comprehending cooperative trends and contributions within some geographical regions. Out of 90 nations, 27 participate in international co-authorship collaborations.

Figure 4 shows nations with named circles, with each circle size indicating the total number of documents authored by individuals from that nation. Connection of the distance between nations shows collaboration strength, assessed by the number of co-authored documents – five clusters emerge from these connections. Cluster 1 comprises eight items, while Clusters 2 and 3 comprise six. Cluster 4 includes four items, and Cluster 5 has three items. There are 3 top international co-authorship relations: China – United States (6.38%), Australia – United Kingdom (3.72%), and United Kingdom – United States (3.72%). European nations had the highest number of co-authorship links (44.14%), followed by European countries with the United States (16.94%). The USA has the maximum number of links with a link strength of 52, working with 15 nations. The USA has substantial social connections with China, South Korea and Australia, demonstrating robust linkages, followed by

Cluster 2 (green), named as 'place attachment in tourism development', is preoccupied with tourist behaviour, tourist destinations and tourism management and tourist attraction.

Cluster 3 (blue), named as 'sense of place in tourism', includes keywords such as public attitude, conservation, coastal zone, and Eurasia.

Cluster 4 (yellow), named as 'environmental values at national park' includes the keywords China, eco-tourism, recreational activity, environmentally responsible, and Taiwan.

Cluster 5 (purple), named as 'human perception regarding environmental change' includes the keywords psychology, questionnaire survey, United States, and protected area.

Cluster 6 (sky blue), named as 'tourist's emotions at place' includes keywords such as place identity, place dependence, tourist satisfaction, and tourist experience.

The summarisation of the above clusters depicts an in-depth interest in the research topic while deep diving into the number of closely knit research topics. The most common keywords presenting research are tourist behaviour, destination, perception, sustainable development and eco-tourism, indicating that the majority of studies are centred around these topics. In contrast, keywords such as revisit intention, memorable tourism experience, social sustainability, park management, tourist satisfaction and community, that appeared less, suggest growing topics.

Conclusion

The study aims to understand place attachment and sustainability by identifying the most prolific authors, journals, keywords and future direction research. Using the Scopus database, this study pioneered a bibliometric approach in examining research patterns related to place attachment and sustainability. It highlights crucial theoretical and practical consequences for the academic community as well as for the tourism industry, with new terms and ideas of sustainable tourism being addressed in recent studies, like green tourism (Fahmawee et al., 2023), green HRM (Tandon et al., 2023), green innovation (Razzaq et al., 2021), green pilgrimage (Senbeto, 2023), green place (Wahyuning-

tiyas & Novianto, 2023), etc., all converged in an idea towards sustainability. The present study conducted over 35 years, the period from 1988 to 2023, to comprehend the effect of place attachment towards sustainability in tourism industry. On scanning the Scopus database, the first article was published in 1988, titled 'Place Imagery in a Small Town'. From 1988 to 2001, there were fewer articles, and very little going on until 2002. From 2011 on, the number of studies started increasing, with substantial increases in 2013 (15), 2015 (19), 2017 (24), and 2018 (41). Subsequently, there was steady growth, with articles reaching 54 in 2021, 68 in 2022, and a highest peak at 88 in 2023. A total of 448 papers fulfilled the criteria for inclusion in the research. C. Ryan is the most cited author in the field, with a total of 1,653 citations. H. Ramkissoon, and G. Brown are two additional authors who have also garnered significant attention, with 1,505 and 619 citations, respectively. *Tourism Management* is one of the top journals, with 25 published articles with 3,189 citations on the subject. Although other countries have also published articles on the subject, China is a leading country with 94 publications and 3,098 citations, followed by Australia and the United Kingdom. 'Antecedents of Tourists' Loyalty to Mauritius: The Role and Influence of Destination Image, Place Attachment, Personal Involvement, and Satisfaction' is the most cited article, published in *Journal of Travel Research*, by Prayag and Ryan in 2012, with 874 citations. According to co-authorship of the countries based on link strength, there are 3 top international co-authorship relations: China – United States (6.38%), Australia – United Kingdom (3.72%), and United Kingdom – United States (3.72%). In the context of keywords, the top 5 most frequently occurring keywords in place attachment and sustainability research are Place attachment (302), Tourism destination (101), Tourism (84), Sense of place (83), and Sustainability (76). We believe that our research contributes to illuminating the way for future researchers to further the study of place attachment and sustainability in tourism. To the best of the researcher's knowledge, there have been few studies conducted in the domain of place attachment and sustainability. In previous bibliometrics of place attachment, researchers used the tripartite par-

adigm of place attachment, comprising three components: person, place, and process (Lewicka, 2011) and a systematic literature review (Feng et al., 2022) related to place attachment using the Google Scholar and Web of Science database, respectively. Therefore, the research contributed to the identification of various concepts regarding the meaning of place attachment, the revealing of ideas that develop and deepen over time, and the identification of new, related research fields. Psychology, climate change, urban planning, heritage tourism, tourism market, quality of life, protected area, decision making and landscape are examples of concepts that have garnered attention in the context of the place attachment-sustainability relationship. The study indicates that more research needs to be done on how place attachment contributes to sustainability at tourist destinations. The study can also help policymakers and tourism stakeholders understand the significance of using sustainable tourism practices to create place attachment.

Implications

Theoretical Implication: From the academic perspective, the study indicates that more study is needed on place attachment and sustainability. The bibliometric survey provides a comprehensive survey of academic literature focusing on place attachment towards sustainability, identifying significant organisations and regions relevant to the topic, bridging the knowledge gap as it reveals most cited authors, best performing journals, and most relevant documents of the domain using various analysis techniques like co-authorship by country and co-occurrence analysis by all keywords. It helps future researchers to find experts for collaboration, providing a base for strong and pertinent research in the field, empowering future researchers in understanding the area more effectively and further helping to identify emerging trends.

Practical Implication: Goal 11 of the Sustainable Development Goals (SDGs) seeks to promote the development of 'sustainable cities and communities' by 2030. This goal aims to achieve overall development plans, minimise future economic, environmental, and social expenses, enhance economic competitiveness, and alleviate poverty. Looking into the better ideas for

a bright future, the contribution of academic research helps to portray sustainable behaviour where sustainability actions are monitored and measured. Future sustainability research in place attachment gives a tunnel vision approach with ideas like green mobility solutions at destinations (Zamparini et al., 2022), artificial intelligence and place attachment (Harst, 2023) and the importance of place attachment in modern city planning and how to protect such identities to form a better urban environment (Shao & Liu, 2017). It is beneficial for policymakers and destination executives to comprehend how tourists interact with a destination and develop an emotional bond. Additionally, the study provides a foundation for the creation of cooperative strategies among various interested parties, such as academicians, professionals, and policymakers, to encourage a more coordinated and successful strategy for sustainability through place attachment.

Limitations and Future Research

The primary limitation of the study is that it relies on the author's subjective judgement to include "Place attachment" AND "Sustainability" OR "Tourism" in one of the three categories of research, namely, title, abstract, and keyword. It is possible to miss an item in any search area that does not fit any of them. Secondly, researchers restricted the study only to English-language articles in the highly reputed Scopus database, which reflect moderate and high-quality publications published in the area, while this study can further be extended to other databases such as Web of Sciences and Dimensions A1 in the future. Thirdly, the researchers chose a time period that runs from 1988 to December 31, 2023. The study's possible scope may be expanded for future researchers due to the growth in citations and publications, which might potentially alter the findings. The last limitation is that the study was only analysed using vosviewer and Biblioshiny; however, other tools like Tableau, Gephi, Citespace-II, and Bibexcel may still be employed in future research. Future research should focus on how to enhance tourists' perception of a place's overall intention, improve its ecological attributes, integrate its core values, and foster an emotional connection between people and

place, in order to increase people's attachment to the place. This finding may help future researchers choose research topics that place attachment and sustainability researchers hope to see more interest in the upcoming year. Therefore, professionals and academics interested in doing place attachment and sustainability research might start with this bibliometric study.

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