

## Progress and Hotspot Analysis of Tourism Place Attachment Theory Research Based on Knowledge Graph Visualization Analysis

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### ABSTRACT

People-place relationships are changing due to rapid urbanization, which has sparked new research on how and why travelers develop strong emotional bonds with places. This study uses VOS viewer software to perform bibliometric and network visualization analyses of place attachment research related to tourism, mapping the intellectual structure, central themes, and developmental trajectories of this field using 659 publications indexed in the Web of Science database from 2013 to 2023 as the research sample. The analysis's findings show that place attachment has developed into a well-known interdisciplinary issue that spans geography, leisure and recreation studies, and environmental psychology. With extensive cross-institutional collaborative networks, international academic research in this field exhibits increased range and significance. The relationship between place attachment and emotive experience, the mechanisms of visitor-place integration, and the connections between these two dimensions and the sustainable development of destinations are currently the three main areas of focus for the prominent research clusters. Recent research trends show that this discipline is developing towards deeper theoretical study and diversified methodological methods, with closer ties to destination management and sustainable development. By synthesizing literature over the past decade, this review clarifies the existing research consensus and future directions in the field, laying a theoretical foundation for targeted interdisciplinary research as well as policy formulation and practical implementation in the realm of sustainable tourism.

**Keywords:** Place Attachment; VOS viewer; Tourism; Sense of Place.

### INTRODUCTION:

The relationship between people and their environment has been an important topic in sociology and environmental psychology since at least the early 1980s, when scholars began to systematically examine how individuals develop emotional, cognitive, and behavioral bonds with specific places (Altman & Low, 1992; Williams & Roggenbuck, 1989). Place attachment is now widely understood as the affective bond between people and places, grounded in identity, dependence, and social meaning, and it has been analyzed as both a psychological process and a socio-cultural phenomenon (Scannell & Gifford, 2010; Kyle, Graefe, Manning, & Bacon, 2004). Researchers from multiple disciplines — including environmental psychology, human geography, and leisure and tourism studies — have developed diverse theoretical models and applied place attachment to questions such as pro-environmental behavior, heritage conservation, recreation experience, and destination loyalty (Lewicka, 2011; Ramkissoon, Smith, & Weiler, 2013; Williams & Vaske, 2003). In China, research on place attachment emerged more slowly compared to North American and European contexts, and tourism-focused studies became more visible only in recent years as leisure mobility, rural revitalization, and cultural landscape preservation gained policy and academic attention (Chen, Dwyer, & Firth, 2014; Hou, Lin, & Morais, 2005). Existing Chinese studies often emphasize case-specific or destination-specific analyses

— for example, attachment to heritage villages, ecotourism sites, or ethnic cultural tourism areas — rather than building a unified theoretical or methodological framework for place attachment as a research field (Hou et al., 2005; Chen et al., 2014). As a result, there is still a lack of systematic synthesis of how place attachment has been conceptualized, measured, and applied within the Chinese leisure and tourism literature, including how this work has evolved over time and which themes dominate. Bibliometric mapping can address this gap by quantitatively summarizing publication patterns, research clusters, and knowledge structures, and by identifying emerging hotspots and future directions (Su & Teng, 2018; Lewicka, 2011).

Accordingly, this paper applies bibliometric methods to (1) systematically review the development of place attachment research in China, with particular attention to leisure and tourism contexts; (2) describe the structural characteristics of the field — including key authors, institutions, and thematic clusters; and (3) generate visual knowledge maps that clarify current research foci and indicate how the field may continue to evolve (Su & Teng, 2018; Ramkissoon et al., 2013). These results aim to provide scholars with an integrated overview of the intellectual structure and development trends of place attachment research, and to highlight theoretical and practical directions for future work in the Chinese context (Scannell & Gifford, 2010; Lewicka, 2011).

The relationship between people and their environment is an essential area of sociological research that began in the early 1980s. Place attachment is a widely discussed concept that explains the emotional relationships between people and places. Scholars from different disciplines, such as environmental psychology, human geography, and leisure tourism, have produced rich theoretical constructs and practical explorations. However, process research in China started late, with very few results related to leisure tourism. Most of the research focuses on the design of single-structure events and the improvement of process excavation methods, and scholars still need to systematically review or conduct a bibliometric analysis of the current status and development trends of this field in China. Therefore, this paper uses bibliometric methods to systematically summarize research on place attachment and comprehensively analyze this field's research structure and quantitative information. It provides a systematic review and visual maps to outline the overall framework of place attachment research for scholars in the field, highlighting research foci and future trends.

## LITERATURE REVIEW

Tourism research is an interdisciplinary field that incorporates theories and methods from various disciplines. With the rapid development of the tourism industry and its increasing impact on the global economy, society, culture, and environment, tourism research has deepened and broadened. A deep understanding of tourism research requires an interdisciplinary perspective, integrating theories and methods from sociology, psychology, economics, environmental science, and other disciplines to understand tourism phenomena comprehensively. It requires a balance between global and local perspectives to understand tourism development in the context of globalization. The development and deep understanding of tourism research reflects the multifaceted and dynamic nature of the tourism industry as a complex phenomenon (Yan & Halpenny, 2022). Many tourism researchers study the relationship between people and places by examining place attachment, which involves the depth and nature of emotional ties to specific places (Dalavong, Im, & Choi, 2024; Qiu, Wu, Li, Pan, & Guo, 2025; Ramkissoon, Nekmahmud, & Mavondo et al., 2025). Current research on travelers' place attachment focuses on two main aspects: the theoretical structure and constituent elements of place attachment and the impact of place attachment on various behavioral outcomes, including the intention to return, visitation propensity, and other forms of loyalty, as well as environmental behavior. Scannell and Robert Gifford (year) mentioned that place attachment combines people, psychological processes, and place. Emotions, behaviors, and cognition comprise the 'process' elements; the characteristics of the destinations to which people are attached are the key to 'place.' The mechanisms of place attachment and the definitions of its conceptual dimensions have always been controversial. Whether the interdisciplinary application of place in new disciplines can generate new theoretical foundations.

There have been review studies on tourism and place attachment theory, but less related literature uses VOSviewer software for visual analysis. To have a clearer understanding of the research hotspots and trends of place attachment theory in tourism and to further promote the implementation of the strategy of sustainable development of tourism economy, this paper is based on the literature of the Web of Science Core Collection database from 2013–2023, using VOSviewer software to summarize and sort the literature on the topic of tourism place attachment theory in terms of the number of papers published year by year, the relevance of author collaboration, the analysis of keyword co-occurrence, and the relationship of co-citation. This paper is based on the 2013–2023 Web of Science Core Collection database. It uses VOSviewer software to summarize and sort out the literature on the topic of tourism place attachment theory in terms of the number of papers published year by year, the relevance of author cooperation, the analysis of keyword co-occurrence, and the relationship of co-citation, to understand the application of tourism place attachment theory in the tourism industry and the progress of research, and to show the current status of research in this field, to promote the healthy and sustainable development of tourism.

## METHODOLOGY AND DATA SOURCE

### 3.1 Methodology

Bibliometrics was first introduced in the early 1900s. It became an independent discipline in 1969 (Pritchard, 1969) and has been widely used in literature analysis (Diem & Wolter, 2013). Bibliometric research focuses on quantitatively analyzing publications about a particular phenomenon (Liu, Liu, Wang, & Pan, 2019). This type of research effectively explains how a field of study is produced and developed (Van Raan, 2005; Zhang, Chen, Wang, & Ordóñez, 2016). It is possible to measure the development of a particular field of research through its scientific production and productivity over a given period. Bibliometric analyses provide a more objective way of exploring research trends and performance and are complementary to traditional literature reviews (Jiang, Ritchie, & Benckendorff, 2019). As suggested by Guzeller and Celiker (2019), bibliometric analyses can examine the intellectual structure, knowledge domains, geographical regions, research topics and methods, and maturity of issues in a scientific discipline or journal. At the same time, with the addition of modern computer technology, graphical and visualization results can complement bibliometric analysis. Visual co-citation analysis in bibliometrics can facilitate the interpretation of data; it can make the results more comprehensive. Visualization helps to intuitively find the intrinsic links between information and to present the view more clearly, e.g., the same research topic by different authors, the research focus of other institutions, established theories leading to new theories, and so on.

Knowledge mapping can be performed using VOSviewer, which uses probabilistic principles for data

normalization and provides various visualization options, including network view, overlay view, and density view in domains such as keywords, shared institutions, and co-authors (van Eck & Waltman, 2010, 2014; Van Raan, 2019). These views are easy to create and graphically appealing, which is their distinguishing feature.

### 3.2 Data Source

#### 3.2.1 Data collection

This study chose the Web of Science (core collection) as the data source. In contrast, the indexes were selected from SCI-EXPANDED and SSCI to ensure that the data retrieved were comprehensive and accurate. The

definitions around place attachment and different dimensions were defined using the search formula  $TS = ("place\ attachment" OR "place\ dependence" OR "place\ identity" ("tourism" AND ("attachment" OR "dependence" OR "identity" )))$ , with a period from January 2013 to December 2023 and a search deadline of 13 February 2024, with literature types selected as articles. A total of 659 papers (all journal articles) were obtained after de-weighting: Journal papers) were obtained after de-weighting the search results, and then the retrieved papers were screened (the screening process can be found in the "Data cleaning" section of the article), and finally, 659 valid papers were obtained.

**Table 1 Summary of data source and selection**

Category	Specific Standard Requirements
Research database	Web of Science core collection
Citation indexes	SCI-EXPANDED、SSCI
Searching period	January 2013 to December 2023
Language	“English”
Searching keywords	(“place attachment” OR “place dependence” OR “place identity”) AND (“tourism”*)
Subject categories	“Management” or “Sociology” or “Psychology”
Document types	“Articles”
Data extraction	Export with full records and cited references in plain text format
Sample size	659

#### 3.2 Data scrubbing

Data extracted from databases may contain duplicates or content irrelevant to the research question if not carefully screened. To prevent these irrelevant data issues from affecting the analysis results, it is crucial to perform data cleaning, which helps to ensure the accuracy and validity of visual analyses. In this study, we adopted the "DEAN" data cleaning method developed by Wei Pan and colleagues, which can effectively reduce the negative impact of data quality issues. Specifically, the DEAN method removes duplicates, corrects errors, standardizes aliases, and removes distracting low-frequency keywords. The data cleaning process and its results in this study are detailed in Table 2.

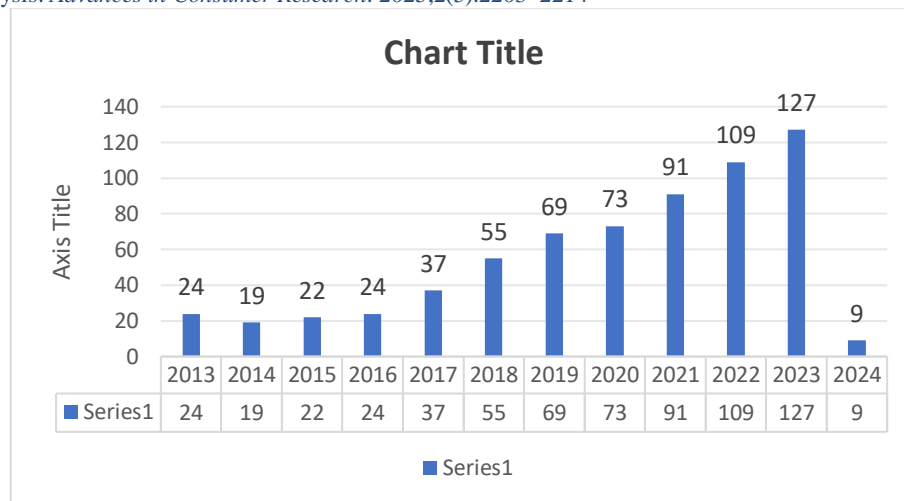
**Table 2 data scrubbing**

serial number	step	corresponds	event
1	Remove Duplicates(D)	Merge duplicate records	8 duplicate records deleted, 210 remaining
2	Erase Errors(E)	Delete those that do not meet the search requirements	Deletion of 58 records that are far removed from the subject of the study and do not meet the needs of the study.
3	Merge Alias(A)	Combining words of the same concept	812 keywords were extracted, some synonyms of grammatical and semantic heterogeneity were removed, and 8 keywords with the same meaning were merged.
4	Reduce Noises(N)	Delete low-frequency words	Hide words with a frequency of less than 5

#### 3.2.3 Underlying quantitative information

The 659 papers used in this study were from 1809 authors from 835 institutions in 74 countries, published in 163 journals, citing 31,283 cited documents from 11,327.

#### 3.2.4 Information on the volume of publications



**Fig1. Distribution of publications 2013 to 2023**

Figure 1 shows the growing interest in place attachment in tourism research, with an even distribution of papers published over time, with no cliff drops or spurt increases. Overall, the number of papers published in this field continues to rise continuously, with steady growth, especially after 2018. The number of papers published has increased rapidly, and more and more researchers are paying attention to this field. In contrast, in 2023, the number of documents published rose to more than 127, which indicates that this research field has gradually matured in recent years and has received more and more scholars' attention. It has become a new focus for tourism and other research, and the development of the discipline has entered a period of maturity.

### 3.3 Descriptive Statistics

#### Bibliometric Analysis of Authors

The famous scholar Price (1963) pointed out that an analysis of the authors of the literature informs about the representative scholars and core research strength of the field of study since highly productive authors on the same topic produce more than half of the papers in the same field. This set of authors is quantitatively approximately equal to the square root of the total number of all the authors, i.e., [Price's specific theory].

$$\sum_{m+1}^I n(x) = \sqrt{N}$$

Where  $n(x)$  denotes the number of authors who have written  $x$  papers,  $I$  = is the number of papers by the most prolific authors in the field (as shown by VOSviewer statistics = 14),  $N$  is the total number of authors, and  $m$  is the minimum number of publications by core authors. According to Price's Law, the minimum number of publications of core authors in a field  $m = 0.749 \times \approx 3$ . Therefore, the authors with more than 3 publications (including 3) are positioned as the core authors in the field, with a total of 53 core authors and a total of 222 publications, which accounts for 35% of the total number of publications. Therefore, it can be assumed that educational big data and data mining have formed a more stable author cooperation group. Table 1 demonstrates the top 5 highly productive authors published in the field.

**TABLE I Most important authors in the place attachment of tourism research field**

Rank	Author	Documents	Citations	Average Citation/Publication
1	han, heesup	14	620	44
2	ramkissoon,haywantee	13	1577	121
3	lee, tsung hung	8	959	120
4	stylidis, dimitrios	8	527	66
5	zhang, jie	8	347	43

Among the highly productive authors, the most prolific author is Han Heesup, with a total of 14 publications from 2010 to February 2022, earning 620 citations and an average of 44 citations per article; in second place is Rakissoon, haywantee, with 13 publications, earning 1,577 citations, and an average of about 121 citations per article.

#### Bibliometric Analysis of Journals



It was found that most of the journals that published papers in this field in the last ten years belonged to the field of tourism and general interest, except for a few general interest journals. The top 10 journals in terms of number of publications are shown in Table II.

**TABLE II Top 10 Journals in the place attachment of tourism research field**

Rank	sources	publications	Citations	Citation/Publication
1	Sustainability	61	767	13
2	Asia pacific journal of tourism research	39	674	17
3	Tourism management	33	4522	137
4	Journal of sustainable tourism	30	1633	54
5	Current issues in tourism	28	474	17
6	Journal of travel research	25	1695	68
7	International journal of tourism research	21	494	24
8	Journal of travel & tourism marketing	20	667	33
9	Frontiers in psychology	18	75	4
10	Journal of environmental psychology	17	1283	75

The most published journals were Sustainability, with 61 articles; Asia Pacific Journal of Tourism Research, with 39 articles; and Tourism Management, with 33 articles. Sustainability is a leading academic journal covering multiple disciplines and the broad field of sustainable development, providing a platform for researchers, policymakers, and practitioners to share and discuss sustainability research and innovation. Asia Pacific Journal of Tourism Research is an international academic journal with significant standing in tourism research, providing a high-quality platform for tourism scholars and practitioners to share research findings and discuss challenges and opportunities in the tourism industry. The analysis of journal citations shows that the journal with the highest number of individual citations in Table 2 journals is Tourism Management, an authoritative journal in the field of tourism research, with a total of 33 articles and 137 individual citations, indicating that the articles published in this journal are of high quality and highly regarded in the field of tourism research. An analysis of the published literature shows that the journal is dominated by empirical research papers focusing on how to sustain tourism, what opportunities are available, and how to provide multidisciplinary advice for tourism development.

Bradford's Law, introduced by the British librarian Samuel C. Bradford in 1934, describes how literature on a subject is distributed across journals, typically in a core and successive zones of diminishing productivity (Bradford, 1934; Sudhier, 2010). This law is instrumental in explaining how scientific publications are distributed across different journals, especially in distinguishing between core and peripheral journals. In science and technology journals, papers published within a given field are ranked in descending order according to the number of publications. This ranking helps to identify a core zone and additional zones where the number of papers published in each zone is roughly equal, following a distribution pattern where the number of journals corresponds to a ratio of 1:a:a<sup>2</sup>:...

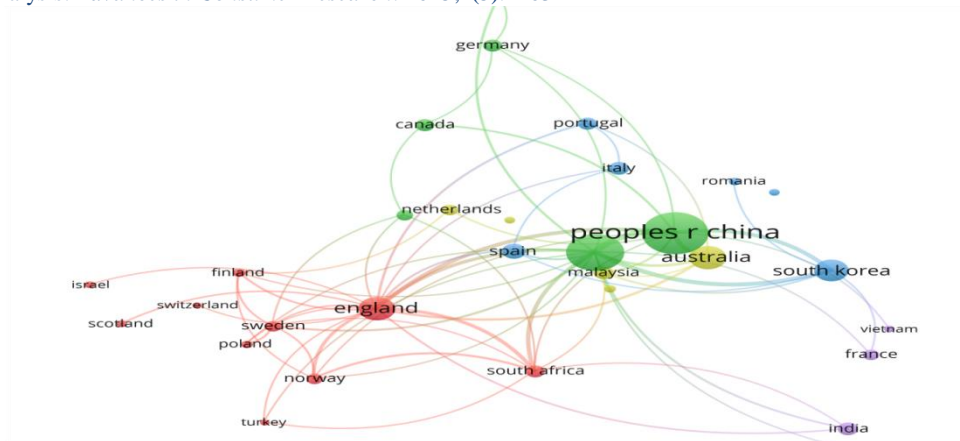
**TABLE III. Journals Publications**

Zone	Publications/ Journal	Number of Journals	Number of Publications
First Zone	≥21	8	216
Second Zone	20-5	23	220
Third Zone	1-4	132	223

In exploring the application of place attachment theory to tourism research and analyzing the journals published between 2013 and 2023, we observed a trend towards a roughly equal number of research outputs across the three central regions. The ratio of the number of these journals is approximately 1:3:9 (further subdivided into 1:3:32), revealing that the distribution of research across the three areas is characterized by a fundamental consistency with Bradford's Law. Bradford's Law states that the production and distribution of scholarly literature exhibit a particular type of imbalance, and the data analyzed in this study strongly support the applicability of this theory to the application of place attachment theory in tourism studies.

### **Bibliometric Analysis of Countries**

To further unearth those countries that have made outstanding contributions in place attachment research and can lead the research trend in the long run, this study analyzed the number of publications from 73 countries. Firstly, the countries with publications greater than or equal to 5 were visualized through VOSviewer, and the results are shown in Figure 2.



**Fig. 2. Co-occurrence of countries**

The visualization in Figure 2 provides insight into the distribution of papers published by different countries in this field. In the graph, the size of a node represents the number of documents published by a government, with larger nodes indicating a higher volume of publications. The thickness of the lines between the nodes illustrates the frequency of collaborative publications between countries, with thicker lines indicating closer collaboration. In addition, the color of the nodes distinguishes different groups or clusters. This visual representation clearly highlights the uneven distribution of paper publications between countries, with a pronounced top-tier effect showing that a significant proportion of research output is contributed by a few countries.

Table IV lists the top 5 countries regarding the number of publications in this field. It can be seen that Chinese scholars contributed the most research papers (258 in total), accounting for 39.1 percent of the total number of publications in this field, but the number of citations is low. The second largest contributor is the United States, which has 164 publications and 5204 citations. The highest average number of citations per publication was found in England, with 69 papers cited 4,192 times and a high number of citations per publication of 61.

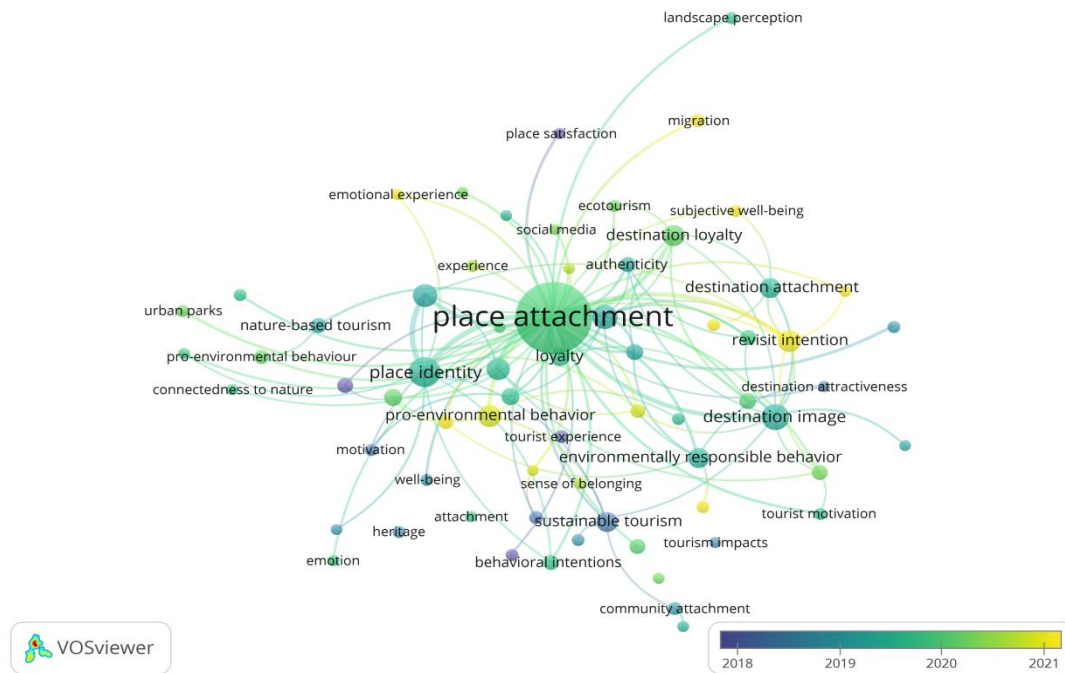
**TABLE III. Top 5 Countries in the place attachment of tourism research field**

Rank	Country	Publications	Citations	Average Citation/ Publication
1	Peoples china	258	6685	26
2	USA	164	5204	32
3	England	69	4192	61
4	South Korea	58	1811	31
5	Spain	28	795	28

## VISUAL ANALYSIS AND DISCUSSION

### 4.1 Co-Occurrence Analysis on Keywords

Keywords coalesce the core and essence of a paper, and keyword co-occurrence analysis can reveal the research hotspots in a scientific field. Keyword density mapping was performed on 659 papers using VOSviewer, and essential keywords with a frequency greater than or equal to 6 were selected for visualization. The results are shown in Figure 3.



**Fig. 3. Map of keyword overly**

**TABLE V. High-Frequency Keywords in the place attachment of tourism research field**

Combining Figure 3 and Table 5, it can be found that excluding the core keywords in the search terms, among the other keywords, the high-frequency keywords, such as classification and prediction, show the purpose of conducting research on place attachment theory, i.e., to achieve the development of the theoretical development lineage of place attachment, the application field or multidisciplinary intersection, and the application of the theory in tourism research through the analysis and mining of big data. For example, Hwang, S. N (2005) explored place attachment in the field of tourism management by constructing and testing a model, verifying the construction of an integrated model under the new theory,



cluster	color	keyword
1	Red	Place attachment Place dependent Place identity Place-attachment
2		Adaptation Areas Emotion attachment
2	Orange	Attributes Authenticity Behavioral intention Co-creation Consumption
3		Cultural tourism Customer engagement
3	Blue	Attachment Attitudes Community attachment Community involvement
4		Community participation Determinants
4	Yellow	Activity involvement Antecedents Chinese Consequences Customer satisfaction Destination image Destination loyalty
5		Attitude Band Destination attachment Dimensions Emotion
5	Purple	Identification Landscape perception Personality Positive emotion
6		Belief-norm theory Commitment Customer Loyalty Decision-making
6	Teal	Experience Intention Mediation role

The red cluster (Cluster1) focuses on place attachment. Related articles mainly analyses the relationship between place, place attachment, place identity and emotions, e.g. how tourists can increase their emotional attachment to tourist destinations by enjoying positive emotions and how this emotional attachment affects tourists' tourist experiences and behavior (Hwang, Lee, & Chen, 2005); the geographical perspective of place attachment is explored, focusing on the concept of place attachment, its influences and its relationship with other related concepts, as well as the relationship between place attachment and tourists' behavior and attitudes; Tourists' place attachment is explored from a geographical perspective, with a focus on the concept of place attachment, its influences and relationship with other related concepts, as well as the relationship between place attachment and tourists' behaviors and emotional experiences (Yan & Halpenny, 2022); Tourists' perceptions of destination authenticity and the place attachment associated with it, to suggest ways to strengthen destination authenticity and enhance potential tourists' place attachment in order to promote sustainable development of the tourism industry (Cong, Zhang, & Chen, 2022), and other studies have examined differences in place attachment motivated by a variety of factors and found that there are differences in place attachment motivated by multiple factors and found that there are differences in place attachment motivated by numerous factors and found that there are differences in place attachment motivated by volitional with autonomous motivation, with behavioral guidance towards the destination and emotional origins with the place.



Green Cluster (cluster2) focuses on the nature of attributes. Related articles have analyzed the relationship between attribute nature, integrity, behavioral intent, and behavioral tendencies, e.g., human-namable visual 'attributes' are beneficial for a variety of recognition tasks, and have further shown how the proposed relative attributes provide more detailed textual descriptions of new images, which in practice are more accurate for human interpretation. We demonstrate the approach on datasets of faces and natural scenes and show its clear advantages over traditional binary attribute prediction in these new tasks (Parikh & Grauman, 2011); the notion of authenticity informs many of the central themes in management research. There is broad agreement that authenticity connotes what is “real,” “genuine,” or “true,” yet beneath this surface consensus the construct remains contested and multidimensional (Lehman, O'Connor, Kovács, & Newman, 2019). social psychologists have extensively studied behavioral intentions and their relationship to future behavior, which are an individual's self-predictions of their future behavior, as well as their role in determining that behavior and their utility as predictors of behavior. Behavioral expectancies are a more accurate predictor of overall behavior (Netemeyer & Bearden, 1992).

The blue-green cluster (Cluster 3) focuses on attachment theory and determinants. Attachment theory is currently the dominant theory in studying parent-child relationships and their impact on development. The theory has generated a growing body of empirical work and is one of the few contemporary integrative psychological theories. It provides a detailed examination of the factors that contribute to the formation of early attachment and the impact of attachment on development, including social competence, mental health, and physical health(Goldberg, 2014). Both linked elements are 'deterministic'; neither 'determines' the relationship between them, and the nature of the link is that separate individuals are connected by correlations, making them determinants of the composite rather than of each other (Prior, 1949). The rest of the related research analyses the first application of place attachment theory to people's emotional attachment in the context of community and geographical change, with an initial vision of a place.

The yellow-green cluster (Cluster 4) focuses on activity and satisfaction. This is true of behaviorism, which studies the biological behavior of individuals, and cognitivism, which studies individuals' mental processes and structures, a process of identifying different activities (Agre & Chapman, 1987). This is a report on how colleges can combine customer satisfaction models and business theories to better serve their students; community colleges view and measure customer satisfaction from a global and specific perspective. The primary aim of using these models is to meet the needs of students and provide a quality education (Hom, 2000). Activity and satisfaction in tourism are the display of the design concept. Still, also after the experience of emotional feedback, the activity itself is behavioral art. Still, after the integration of human feelings about the activity, the region of the activity becomes rich, with cultural connotations and regional characteristics, forming a distinctive symbol.

#### 4.2. Co-Citation Analysis

The exact citation analysis aims to capture the papers applied more frequently in the field of study and the journals that publish them. The actual citation mapping of journals was carried out by VOSviewer by setting the minimum citation threshold of the cited journals to 30, leaving 30 journals for the same citation analysis of cited journals, and finally presenting the exact citation relationship mapping as shown in Figure 5.

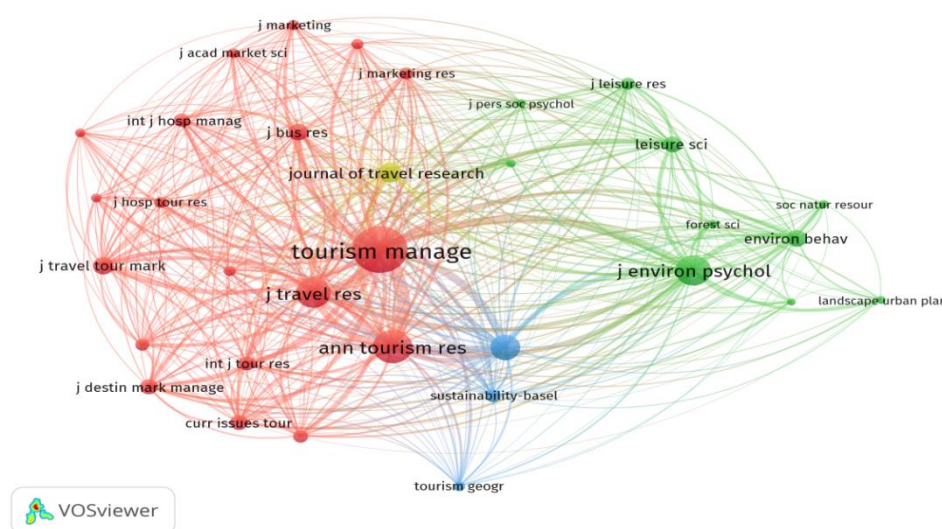
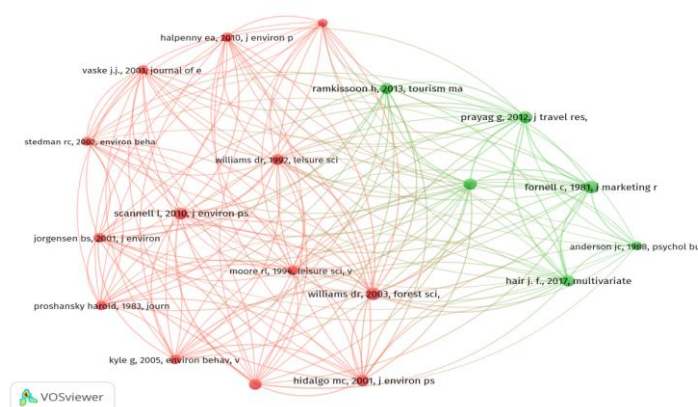


Fig. 5. Co-citation of cited journals

As can be seen from Figure 5, the journal citation network consists of four clusters, corresponding to the four colors in the figure, and the top three journals in terms of citations are Tourism Management (3998 citations), Annals of Tourism Research (1943 citations), and Journal of Environmental Psychology (2627 citations), all of which are from JCR-1.

Of the four clusters, the journals in the red and green clusters are primarily in the fields of tourism and environmental psychology, focusing on theoretical developments, research methods, and practical applications in tourism, providing a broad platform for discussion as well as exploring various aspects of human-environment interactions, including how individuals perceive, experience and influence their physical environment and how the environment affects human behavior and mental states. The purpose of citing these journals is to analyze and review existing research and provide theoretical and empirical support for their own research. In contrast, the journals in the blue and yellow clusters also mainly expose comprehensive knowledge within the field of tourism. The articles' quality is generally not a different quality than in the first two categories due to their over-coverage. These journals are cited mainly to provide technical support for their own research.



**Fig. 6 Co-citation of cited references**

Figure 6 shows that the co-citation network of highly co-cited papers can be divided into two main categories, corresponding to the two colors in the figure. The red clusters are mainly researching literature in environmental psychology, the green clusters tend to be more in the direction of tourism management and leisure studies, and the red clusters are mostly review studies.

The majority of highly co-cited publications cluster between 2000 and 2011, according to our co-citation study, with a continuous flow of post-2011 works exceeding the 10-citation criterion. This pattern points to a field that developed around fundamental concepts (such as place attachment, identity, and destination experience) before diversifying both methodologically (increased use of bibliometric mapping, structural models, and mixed methods) and thematically (authenticity, pro-environmental behavior, experience design, digital mediation).

In addition to cross-disciplinary borrowing from environmental psychology, marketing, and geography, the persistence of new, frequently cited contributions after 2011 suggests continued theoretical improvement and expanding application contexts (e.g., protected areas, heritage sites, urban destinations, social media-mediated attachment).

When considered collectively, these patterns suggest that (i) fundamental ideas remain the foundation of the field, (ii) more recent research expands attachment studies to new people and environments, and (iii) a variety of approaches and data sources are probably going to propel the next wave of discoveries. Longitudinal, cross-cultural designs; integration with sustainability and resilience agendas; and multimodal data (text, photos, mobility traces) to capture how attachment develops and changes throughout the tourist journey could all be beneficial for future research.

Analyzing the year of high same-cited literature, it can be found that most of the highly same-cited papers were published in 2000-2011, and the articles with more than 10 citations after 2011 are still presented, which indicates that the research in this field is continuous and can be cross-disciplinary and diversified development of the study.

## CONCLUSION AND PROSPECT

Tourism and environmental psychology is a multidisciplinary field of study that spans the sciences of tourism and psychology. In today's ever-changing science and technology, the study of psychology is no longer limited to the collation of laboratory data. In contrast, tourism combines the knowledge of management, geography, and psychology in a multidisciplinary way, forming a new situation of integrated tourism development, making it a constantly iterating and renewing discipline. This paper analyses more than ten years of relevant research in this field

through VOSviewer software, reviews the development trend of the field, verifies the applicability of Price's law and Bradford's law in the field, and analyses the core authors, high-producing national institutions, critical journals in the field, and keyword clustering in the field of this research based on bibliometric analysis. The conclusions are summarized below:

(1) The scientific field of tourism and psychology has developed a relatively stable group of author collaborators and several eminent scholars who have played a pivotal role in advancing the field.

(2) In tourism management and environmental psychology, the journals that publish relevant papers mainly focus on these two specialized areas. At the same time, some papers have also been published in comprehensive journals. Open-access journals account for a relatively large proportion of the field. This phenomenon shows that the open-access movement has effectively contributed to advancing research in tourism management and environmental psychology.

(3) Keyword co-occurrence and evolutionary analyses reveal that the field of research has experienced rapid development in the last decade or so, with a significant expansion in the scope and depth of study and an increasingly wide range of technological applications. In addition, some scholars have begun to pay attention to the ethical issues encountered in data collection and application, demonstrating research progress at a deeper level.

(4) The same-citation analysis highlights widely cited journals and papers in the field, providing subsequent researchers a convenient way to explore core research. This enables prospective researchers to quickly grasp the field's key elements and overall structure to conduct subsequent research more effectively.

#### **Limitations and Prospects There are some limitations of this study due to some factors.**

Firstly, the bibliometric analysis software has high specifications and standards for data, and to ensure the quality and completeness of the collected data, this study only used journal articles from the core ensemble of Web of Science databases indexed by SSCI and SCIE and did not include other journal articles. Databases (e.g., Scopus), which inevitably leads to the problem of incomplete data analysis. In addition, quantitative analysis needs to analyze and interpret the data, which requires researchers to have an in-depth and comprehensive understanding of the field. Otherwise, it is inevitably subjective. The data involved needs to be narrower, inevitably resulting in a one-sided understanding, and cannot be prudent. Still, the visualization of the results will be more transparent and obvious.

The combination of tourism and place attachment theories has broadened the ideas and explored the potential problems for the research in this field, which will continue and energize this study, and therefore, this study has the significance and value of further deepening. In the following research, we need to first integrate the literature from multiple databases to make the filtered data as comprehensive as possible and actively communicate with scholars in the field of tourism and place attachment to understand the cutting-edge developments in the field of education to improve and deepen the objective knowledge in the field, and to avoid the subjectivity of personal analyses and interpretations as much as possible.

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