

REVIEWING THE PRODUCTION AND DEVELOPMENT OF 'PLACE' KNOWLEDGE IN A RECREATIONAL CONTEXT

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ABSTRACT

This article aims to review the production, development and trends of place knowledge in the field of recreation from a bibliometric perspective. Data was obtained through a search of the terms 'recreation', 'place', and 'space' on the Web of Science database and by filtering research articles. Relational bibliometric techniques were used to analyze 148 articles. The development of spatial knowledge in the field of recreation was determined through centrality analysis and network mapping techniques. Besides, during the research, the most important articles, researchers, institutions and collaborations in the field were defined. According to the research findings, 302 researchers researched recreation and place, either in co-operation with each other or individually, in 43 journals. Place attachment, sense of place and place meaning have been determined as the dominant and main subject areas in the field of recreation.

1. Introduction

Due to the nature of recreation, whether it is physical or virtual, almost all leisure and recreational experiences occur and experience in space/place context. The place has been conceptualized by creating comprehensive literature through studies in the disciplines of geography, landscape architecture, psychology, rural sociology, marketing, urban planning and literature. Place research has traditionally exhibited a positivist approach, with theories and methods based on scientific empiricism. Researchers have evaluated the objective properties of physical environments and tried to understand how the meanings of place can be associated with specific environments, and what kind of behavior can be practiced in these environments? These research traditions transferred to leisure, recreation and tourism contexts by examining the individual's sense of place within the context of emotional, cognitive and behavioral components. The approaches that followed the traditional approach give a dynamic view of the concept of place. These approaches focus on the transformation of place and its relationship with the individual. In parallel with these approaches, due to their importance in recreational experience, recreation and place studies have created a multi-disciplinary research area by using theoretical infrastructure and theories that have been acquired from different disciplines with a strong philosophical structure (Moncrief, 1970; Brown, Dyer, & Whaley, 1973).

The main purpose of this study is to analyze the

place knowledge produced and its evolution in the field of recreation. The study briefly shows the knowledge of place in the field of recreation and determines the social structure of this field. More specifically, within the study, the aim is to determine the approaches that play key roles in the field of recreation research, mainstream research topics, researchers and institutions, the knowledge base and development of the research field. Within this scope, research articles in the Web of Science Core Collection were examined through the quantitative approach of bibliometric analysis. In this context, degree centrality, the centrality of betweenness, Bonacich power, co-occurrence and co-citation analyses were performed. Within the current research, a macro view of the general development characteristics and trends of place, which are important contexts for recreational experience, recreation areas and planning are conceptualized. Therefore, a general view of the recreation/place research area is presented within this research.

In the following sections of the study, a literature review and method section on the concept of place in recreation are summarized. The findings section includes the results of the analysis with bibliometric techniques and network maps. In the discussion and

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conclusion part, the information obtained from the study is discussed and recommendations for future research are included.

2. Place in Recreation

Almost all recreational activities take place within the scope of a place. In the context of environmental psychology, the place-individual relationship defines relationships that are built on the internal psychological and social processes of individuals and defines them based on various activities and events that are held in place (Smaldone et al., 2005). Positivist and postmodernist paradigms examine places where recreational activities are conducted, from different perspectives. The positivist research tradition defines place as a concrete physical environment in which people move. According to this view, places are objective, exist concretely, and are areas around which people direct their daily activities related to work, play, family and community. On the other hand, the postmodernist perspective questions the basis of the positivist point of view regarding concepts such as 'place', 'space', 'site' and 'location'. Postmodernists argue that traditional approaches cannot explain the identity of the place, the sense of place, the social structuring of places, and the symbolic value of places. Within this context, Soja (1989, p. 79) proposes an alternative, stating that the term 'place' is typically used in at least two different ways. First, it refers to physical environments as the context of social action (traditional conceptualization), and secondly, it treats place as a reference for socially structured contexts of interpersonal interaction and practice. To be more specific, while in the first proposition, place refers to a concrete site (the park, or a beach), in the second proposition place can be a non-physical place (such as a computer network of academicians) that is constantly reconstructed and reproduced. On the other hand, while place and space seem to be synonymous words that can be used interchangeably, the difference between the concepts clarifies the definition. Accordingly, while place defines a more personal environment that is experienced and interacted more often, space is a larger and less personal, more abstract and absolute concept (Okuyucu & Günay Aktaş, 2017).

Parallel to the discussions of place and space, recreation researchers conducted phenomenological studies that shed light on how the place is experienced, its vital importance, subjective meaning and intuitive definitions of environmental experience (Fishwick & Vining, 1992). In this context, in recreation studies, it has been associated with the fields of architecture and geography as a multidisciplinary research area in the context of recreational potential, location, recreational suitability, and spatial characteristics (Kienast, Degenhardt, Weilenmann, Wager, & Buchecker, 2012). On the other hand, the concepts of space and place are used interchangeably in these studies and no difference is observed. For this reason,

the concept of 'place' used in this study includes the subjective 'space' where the recreational experience takes place, and the 'place' can be reproduced and constructed with experiences.

In early research on the relationship between recreation and place, descriptive information was formed to create a social philosophy to identify problems, research priorities, basic variables and develop a methodology (Moncrief, 1970) by focusing on one-sided studies on the interaction of the environment and the individual (Fishwick & Vining, 1992). By referring to a study by Tuan (1980), psychology and recreation researchers have formed a common consensus that certain 'places' and landscapes are important for individuals, especially in resource-based recreation (Tuan, 1980; Sime, 1995; Williams and Stewart, 1998; Stedman 2003a). According to Fishwick and Vining, (1992) this view argues that individuals reflect their identities to the place as a result of their repeated exposure to the places they visit and their social-psychological processes. In a sequel of this, reflection place takes on individual identities. Therefore, individuals' intrinsic motivations for visiting these places can be placed in many contexts like 'escape' (Tuan, 1998), 'connection' (Prayag & Lee, 2019; Line & Costen, 2011), and 'memory' (Lewicka, 2008; Kim & Eves, 2012). In this context, places are constantly transformed, reconstructed and shaped depending on the nature of the recreational experiences performed, the individual and the environment. In this direction, it is similar to the proposition of Soja (1989) mentioned above.

Researchers examining the relationship between recreational behaviour and place in the leisure and recreation literature indicate that the place affects recreational preferences and behaviour (Robinson, 1972; McDonough, 1981; Hammitt, Kyle, & Oh, 2009; Smith, Siderelis, & Moore, 2010). Within this scope, the meanings of place (Lee, 1972; Kyle & Chick, 2007), the use and selection of recreational areas (Moore & Graefe, 1994; Kyle, et al, 2004), the transformation of places (Stokowski, 2002; Defilippis, 1997; Cheung and Tang, 2016), spatial preferences (Carls, 1974; Zhang et al, 2013; De Groot, van den Born, 2003; Abildtrup, et al. 2013), aesthetic value (Chenoweth & Gobster, 1990), the scope of spatial experience (Zube, 1984; Weber & Anderson, 2010), recreational potential (Weyland & Laterra, 2014; Beeco, Hallo & Brownlee, 2014), mapping (Murphy, 1963; Kienast, et al.2012; Beeco, Hallo & Brownlee, 2014, Komossa, et al.2018) and carrying capacity (McCool, 1978; Beeco & Brown, 2013; Beeco, Hallo, & Brownlee, 2014) form the research area. In these studies, it is specified that recreationists assign emotional and symbolic meanings to the places where they perform their activities (Proshansky, Fabian, & Kaminoff, 1983; Prayag & Lee, 2018). Depending on its structural features, such as legibility, accessibility and atmosphere, these meanings become effective in identifying it just like an individual (Giesecking et al.,

2014). This identification and the assigned meaning, develop a sense of place and a sense of attachment to the place. In these studies, the concepts of place attachment, spatial bonding, spatial meaning and sense of place, which are interrelated and have many common aspects, come to the fore (Kyle & Chick, 2007).

Place attachment, which is a complex and integrative phenomenon (Kaltenborn, 1997), presents a psychological structure that emerges with the emotional relationship between the individual and the place (Anderson & Fulton, 2008; Hailu, et al., 2005; Kaltenborn, 1997) concerning the dimensions of place dependence and place identity (Schneider, 2009). On the other hand, spatial bonding refers to a certain identity and emotional bonding developed through the meaning attributed to the environment at the end of a long interaction process (Cheng & Kuo, 2015). In this bond, both emotionality and cognition can be seen (Hammit, Backlund, & Bixler, 2006). Besides, place meaning is shaped by the experience of the visitors and the history of the place (Schneider, 2009). In other words, the place can be made meaningful by the transformation of 'place' into space (Kyle, Mowen, & Tarrant, 2004), concerning the positive or negative role it plays in an individual's life (Manzo, 2005). Finally, the sense of place, which is superficial in the context of recreation, is defined by the perception of aesthetics and dwelling in social and geographical areas (Hay, 1998). These definitions cause place and recreation to be associated with environmental and outdoor education, sociology, social psychology, and environmental psychology (Hailu, Boxall, & McFarlane, 2005; Beery & Jönsson, 2017). Environmental psychology uses various models, such as Berlyne's (1973) aesthetic preferences model, the stimulus-organism-response model of Mehrabian and Russell (1973; 1980), and Kaplan and Kaplan's (1989) preference matrix, to examine the relationship between recreation and place from a cognitive, emotional, and behavioural perspective.

Researchers in the fields of recreation have examined the individual-place relationship from a cognitive perspective using various models developed in environmental psychology. Berlyne's (1973) aesthetic preferences model is the first model developed in this area. According to Berlyne (1973: 31), the source of all changes in behaviour is learning that develops dependent on interaction with the environment. Researchers argue that learned behaviour patterns can be observed when environmental conditions, certain physical performance and practices or environmental stimuli are perceived directly through the sensory organs. Raitz and Dakhil (1998), evaluate this view of Berlyne based on recreational preferences. They state that recreational preferences are learned in the physical environment from childhood and that the individual learns new and various recreational experiences as long as they live in a certain environment. Besides, researchers point out that when a person travels to

a different location than their physical environment, the new environment will not only enable them to create a personal set of leisure preferences, but also a benchmarking environment in which they can compare all types of physical landscapes by their knowledge for recreational potential. However, according to Johnson (1998), the place is not only a learned area where ideas, emotions and memories are formed but also an emotional place where an individual or collective meanings are attributed to the experiences that are emerged in.

The Stimulus-Organism-Response (SOR) Model, developed by Mehrabian and Russell, explains that people's emotional states, such as happiness, excitement, arousal and approach-avoidance behaviour are affected by various elements in the places where they attribute meaning (Mehrabian and Russell, 1973; Russell and Mehrabian, 1978). Russell and Mehrabian (1976) define the concept of a stimulus with spatial characteristics, such as new, complex, intense, unfamiliar, impossible, unstable, dynamic or ambiguous. According to the researchers, stimuli includes many elements from information speed, simple sounds and shapes, complex tasks to interpersonal or social situations, depending on the type of activity individuals give to the places; the pleasure, arousal and so on. The pleasure, arousal and suchlike reactions occur depending on the type of activity individuals held in the places (Floyd, 1997) and reveal approach/avoidance behaviour, as it causes the individual to move away from the real-life area (Russell & Mehrabian, 1978).

Another model developed by environmental psychology researchers is the Preference Matrix. Kaplan Kaplan, (1989) states that individuals displaying heterogeneous characteristics according to the preference matrix have an intersection point of general needs and, therefore, venues with an effective structure that best respond to needs are preferred. The benefits obtained vary, depending on the different characteristics exhibited by recreationists (Brouwer et al., 2010; Abildtrup et al., 2013). These benefits emerge when self-renewal motivated individuals, prefer comfortable and satisfying places that respond to their preferences and reduce their fears (Kaplan, Kaplan, & Ryan, 1998). From a cognitive perspective, as a result of their nature, individuals prefer places with consistency, legibility that they can understand, and they see participatory environments as places with complexity, diversity, and mystery (Singh, Donavan, Mishra, & Little, 2008).

3. Method

In this research, relational bibliometric techniques were used to determine the structures and connections of place knowledge in the area of recreation. Relational bibliometric techniques are generally used to analyze the intellectual and social structures in a particular field (Jiang, Ritchie, & Benckendorff, 2019). The data was obtained

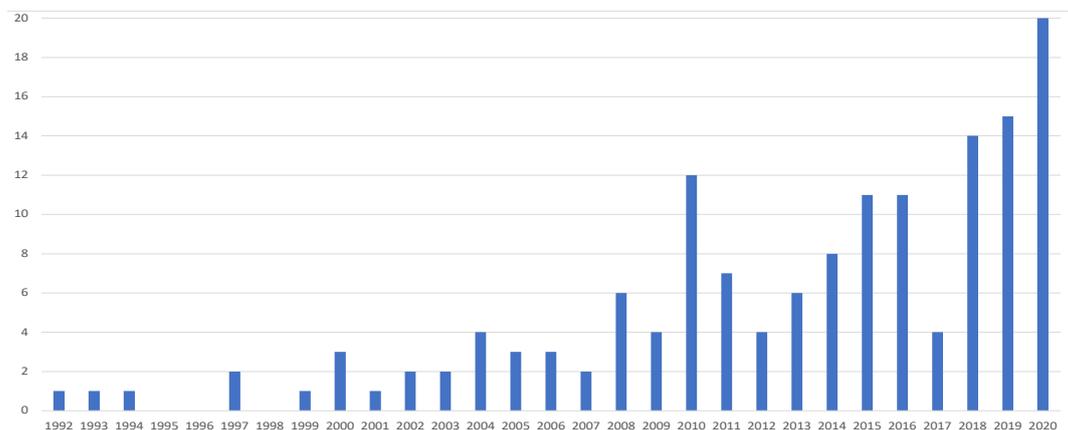


Figure 1. Publication Numbers of Articles by Years

from the Web of Science Core Collection database. The Web of Science Core Collection is shown to be the most effective database of scientific journals (Ramos-Rodriguez & Ruiz-Navarro, 2004) in which articles accepted as ‘certificated knowledge’ are published (Mulet-Forteza et al., 2019). In the present study, three steps were followed to identify bibliometric studies published in scientific journals. In the first stage, the researchers scanned WoS with the keywords of ‘recreation’, ‘place’, and ‘site’. The screening process was limited to articles in the ‘hospitality, leisure, tourism, and sports categories and document types. In the first stage, a total of 159 articles were accessed. In the second stage, 159 articles were examined by two researchers to find articles directly related to recreation and place through keywords and abstracts. In this examination phase, to ensure the validity and reliability of the data, two researchers evaluated the articles once again by confirming the question, ‘Is the article related to place in the area of recreation?’. As a result of these stages, 148 research articles were identified as having being published between 1992 and 2020. The data collection process was carried out between 3-20 November 2020.

A spreadsheet including keywords, authors, publication year, published journal, themes

researched, and authors’ institutions, has been prepared for each article. Descriptive analysis and bibliometric analysis techniques were used to analyze the data. The state and development of place studies in recreation were examined by year of publication. The number of citations was analyzed to understand the impact of the articles, and to measure productivity. Besides, the representation of countries, institutions, journals or authors were determined by citation analysis. Centrality measurements were examined to identify critical researchers in the field. Finally, the co-occurrence of keywords, which is an important bibliometric technique to map the relationship between concepts, ideas and problems, and joint citation analysis (Small, 1973), which expands the citation analysis by adding insight to the intellectual structure of a field (Pasadeos et al., 1998), were applied. Excel was used for descriptive analysis, while Ucinet and VOSviewer software were used for bibliometric analysis and visualization of network maps.

4. Findings

4.1. Distribution of Research Articles

According to the analysis, research studies on the relationship between recreation and place started with the article, ‘Beyond the Commodity Metaphor:

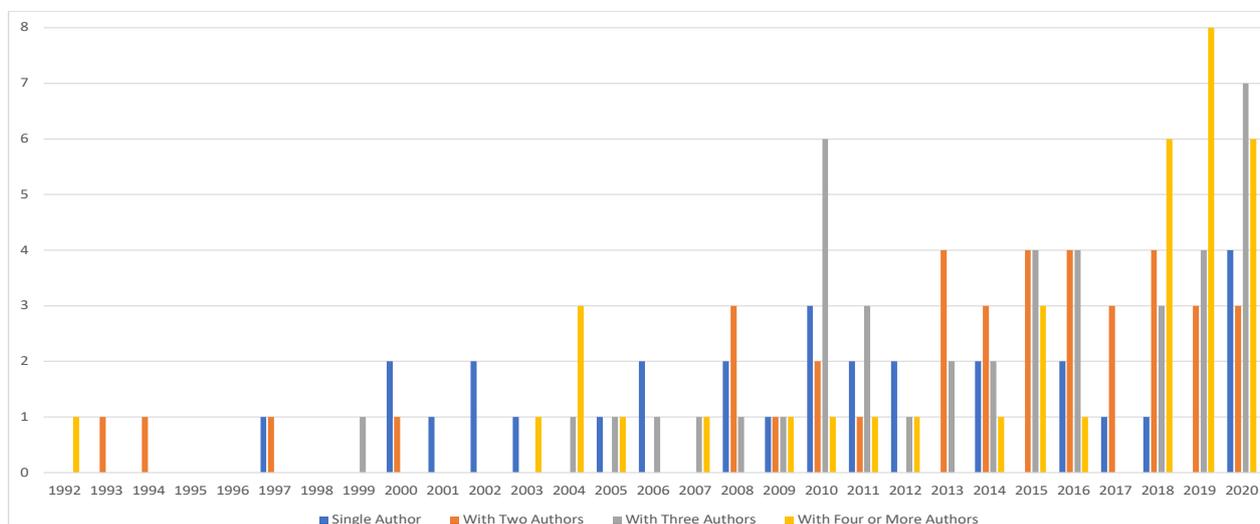


Figure 2. Author Distribution Chart by Years

Table 1. Most Cited Top 20 Articles

N	Article	Researchers	Year	Journal	Total Cit. Score	Annual Cit. Score
1	Beyond the Commodity Metaphor-Examining Emotional and Symbolic Attachment to Place	Williams, DR; Patterson, ME; Roggenbuck, JW; Watson, AE	1992	Leisure Sci.	577	19.9
2	Attachments to Recreation Settings: The Case of Rail-Trail Users	Moore, RI; Graefe, AR	1994	Leisure Sci.	327	12.11
3	Level of Specialization and Place Attachment: An Exploratory Study of Whitewater Recreationists	Bricker, KS; Kerstetter, DI	2000	Leisure Sci.	297	14.14
4	The Relationship Among Tourists' Involvement, Place Attachment and Interpretation Satisfaction in Taiwan's National Parks	Hwang, SN; Lee, C; Chen, HJ	2005	Tourism Man.	226	14.13
5	An Examination of the Relationship Between Leisure Activity Involvement and Place Attachment Among Hikers Along the Appalachian Trail	Kyle, G; Graefe, A; Manning, R; Bacon, J	2003	J. of Leisure Res.	203	11.28
6	Languages of Place and Discourses of Power: Constructing New Senses of Place	Stokowski, PA	2002	J. of Leisure Res.	197	10.37
7	An Empirical Structural Model of Tourists and Places: Progressing Involvement and Place Attachment into Tourism	Gross, MJ; Brown, G	2008	Tourism Man.	178	13.69
8	The Role of the Rural Tourism Experience Economy in Place Attachment and Behavioral Intentions	Correia Loureiro, SM	2014	Int.J. of Hosp. Man.	177	25.29
9	How Recreation Involvement, Place Attachment and Conservation Commitment Affect Environmentally Responsible Behavior	Lee, TH	2011	J. of Sustainable Tourism	153	15.3
10	Understanding Travel Constraints: Application and Extension of a Leisure Constraints Model	Nyaupane, GP; Andereck, KL	2008	J. of Travel Res.	139	10.69
11	An Examination of Recreationists' Relationships with Activities and Settings	Kyle, G; Bricker, K; Graefe, A; Wickham, T	2004	Leisure Sci.	121	7.12
12	Effect of Activity Involvement and Place Attachment on Recreationists' Perceptions of Setting Density	Kyle, G; Graefe, A; Manning, R; Bacon, J	2004	J. of Leisure Res.	120	7.06
13	Experience Use History, Place Bonding and Resource Substitution of Trout Anglers during Recreation Engagements	Hammitt, WE; Backlund, EA; Bixler, RD	2004	J. of Leisure Res.	119	7.00
14	Racial and Gender Meanings of Why People Participate in Recreational Fishing	Toth, JF; Brown, RB	1997	Leisure Sci.	109	4.54
15	Predictors of Behavioral Loyalty Among Hikers Along the Appalachian Trail	Kyle, G; Graefe, A; Manning, R; Bacon, J	2004	Leisure Sci.	100	5.88
16	Nature of Place Attachment: A Study Among Recreation Homeowners in Southern Norway	Kaltenborn, BP	1997	Leisure Sci.	93	3.88
17	Comparison of Place Bonding Models in Recreation Resource Management	Hammitt, WE; Kyle, GT; Oh, Chi-Ok	2009	J. of Leisure Res.	76	6.33
18	You Can Feel Them Looking at You: The Experiences of Adolescent Girls at Swimming Pools	James, K	2000	Journal of Leisure Res.	73	3.48
19	Fairness of Prices, User Fee Policy and Willingness to Pay Among Visitors to a National Forest	Chung, JY. Kyle, GT, Petrick, JF, Absher, JD	2011	Tourism Man.	70	6.8
20	Nature-Based Recreation and Spirituality: A Complex Relationship	Heintzman, P.	2009	Leisure Sci.	65	5.82

Examining Emotional and Symbolic Attachment to Place' that was published in the Leisure Sciences Journal in 1992. A limited number of studies were conducted from 1992 to 2010. In 2010, twelve publications were printed, and it was determined that since 2010, interest in the field and research interest compared to the previous years have increased. The increase can be seen with fourteen articles published in 2018 compared to the highest number of articles published in 2020 with 20 articles.

When the distribution of researchers at the article level is examined by year, although the number of articles with a single author (30 articles) is high, it is noteworthy that collaboration was preferred by

researchers and that the density of articles with three authors (43 articles) was remarkable. The first article, published in 1992, was published by four or more authors, and articles with a single author only began to be published in 1997. As mentioned earlier, in 2020, the highest number of publications was reached. The articles published with a single author were four, with two authors three, with three authors seven and with four or more authors six.

4.2. The Most Influential Research in the Field

The number of citations of a research article shows that the paper has a high scientific impact and contribution to the field (Aksnes, Langfeldt

Table 2. Preferred Journals on Recreation and Place Research

N	Journal	f	%	N	Journal	f	%
1	Leisure Sciences	28	18.92	22	Recreational Sports Journal	2	1.35
2	Journal of Leisure Research	19	12.84	23	Tourism	1	0.68
3	Journal of Park and Recreation Administration	15	10.14	24	Journal of Tourism Culture and Territorial Development	1	0.68
4	Journal of Outdoor Recreation and Tourism	12	8.11	25	International Journal of the History of Sport	1	0.68
5	Journal of Sustainable Tourism	7	4.73	26	Current Issues in Tourism	1	0.68
6	Tourism Geographies	6	4.05	27	Ecosphere	1	0.68
7	Tourism Management	5	3.38	28	Journal of Heritage Tourism	1	0.68
8	Journal of Outdoor Recreation Education and Leadership	4	2.70	29	International Journal of Sport Policy and Politics	1	0.68
9	Leisure Studies	3	2.03	30	Journal of Sport and Social Issues	1	0.68
10	Annals of Leisure Research	3	2.03	31	Environmental Management	1	0.68
11	Loisir & Societe-Society and Leisure	3	2.03	32	Tourist Studies	1	0.68
12	Pedagogics Psychology Medical-Biological Problems of Physical Training and Sports	3	2.03	33	Journal of Destination Marketing and Management	1	0.68
13	European Journal of Tourism Hospitality and Recreation	2	1.35	34	Worldwide Hospitality and Tourism Themes	1	0.68
14	International Journal of Culture Tourism and Hospitality Research	2	1.35	35	Anais Brasileiros De Estudos Turisticos-Abet	1	0.68
15	Visitor Studies	2	1.35	36	Journal of Travel Research	1	0.68
16	World Leisure Journal	2	1.35	37	Tourism Analysis	1	0.68
17	Urban Forestry & Urban Greening	2	1.35	38	Sustainability Science	1	0.68
18	Journal of Place Management and Development	2	1.35	39	Journal of Travel & Tourism Marketing	1	0.68
19	Pasos-Revista De Turismo Y Patrimonio Cultural	2	1.35	40	International Journal of Hospitality Management	1	0.68
20	Research Quarterly for Exercise and Sport	2	1.35	41	Journal of Tourism and Cultural Change	1	0.68
21	Tourism and Hospitality Research	1	0.68	42	Social & Cultural Geography	1	0.68
				43	Journal of Policy Research in Tourism Leisure and Events	1	0.68
Total Published Article		148		Total Percentage		100%	

& Wouters, 2019). Therefore, in this study, the most effective studies in the field were determined according to the number of citations they received. The most effective research studies related to place in recreation are given in Table 1. Table 1 contains information regarding the top twenty articles with the most citations, the author(s) of the article, the publication year of the article, the journal in which it was published, the total number of citations made and the annual citation rate. According to the findings of the research, the article named 'Beyond the Commodity Metaphor: Examining Emotional and Symbolic Attachment to Place', in which Williams et al. (1992) examine emotional and symbolic attachment, ranks first with 577 total citations and a 19.9 annual citation rate. The study 'Attachments to Recreation Settings: The Case of Rail-Trail Users' by Moore and Graefe (1994), which examines adherence to recreation areas, ranks second with 327

total citations and a 12.11 annual citation rate; The study 'Level of Specialization and Place Attachment: An Exploratory Study of Whitewater Recreationists', in which Bricker and Kerstetter (2000) examine the specialization levels of recreationists and their attachment to place, is in third place with a total number of 297 citations and a 14.14 annual citation rate.

4.3. Distribution of Journals

It is determined that 148 articles examined within the scope of this study were published in 43 different journals. As can be seen in Table 2, the journal most preferred by researchers is 'Leisure Science' with 28 articles. 'Leisure Science' is followed by the 'Journal of Leisure Research' with 19 articles and the 'Journal of Park and Recreation Administration' with 15 articles. In the scope of this study it is noted that, following the 'Journal of Outdoor Recreation

Table 4. Keyword Views Together and Total Link Strength

Key Word	Co-View/Occurrences	Total link strength
Place attachment	47	38.00
Outdoor recreation	15	14.00
Sense of place	11	11.00
Place meanings	10	9.00
Recreation	10	8.00
Leisure	7	7.00
Parks	6	6.00
Nature-based tourism	7	5.00
Recreational specialization	5	5.00
Tourism	5	5.00
Place dependence	5	4.00

and the relationships between these themes. For this purpose, studies in which two keywords appear together (keywords highlighted by the authors in each article) were included in the analysis. As a result of the analysis, it was determined that 74 out of 513 keywords in the articles formed eight clusters, depending on the threshold of appearing together twice.

Figure 3 illustrates the main keywords and the size of nodes (depending on the threshold of appearing twice). The nodes are shown as circles in the network, while colours in the network indicate the resulting clusters. Similar colours of nodes and keywords mean they belong to the same cluster (a group of related keywords), and each node belongs to only one cluster. In the network, shorter distances between nodes show the stronger relationship they have. When we consider the biggest clusters, the largest cluster with 17 keywords is Cluster 1 (red nodes). Cluster 1 includes the theme of attachment to

the place with the most connections in the network, and this theme is the most critical in the network. Besides, Cluster 1 contains the keywords of leisure, specialization, motivation, activity involvement, serious leisure time, gender, climate change, and environmental responsibility. It can be said that Cluster 2, the second main cluster in the network where the keywords are co-occurrence, is related to environmental issues. This includes biodiversity, environmental conditions, environmental protection behaviour, weather, national parks, outdoor recreation, nature-based tourism, recreation benefits keywords. Cluster 3 (blue nodes) with 11 keywords consists of recreation, parks, gardens, state parks, physical activity, marketing, limitations, diversity, youth and structural equation modelling keywords that are linked to each other.

The keyword with the highest total number of connections, and the highest number of views on the network, is place attachment with 47 views and

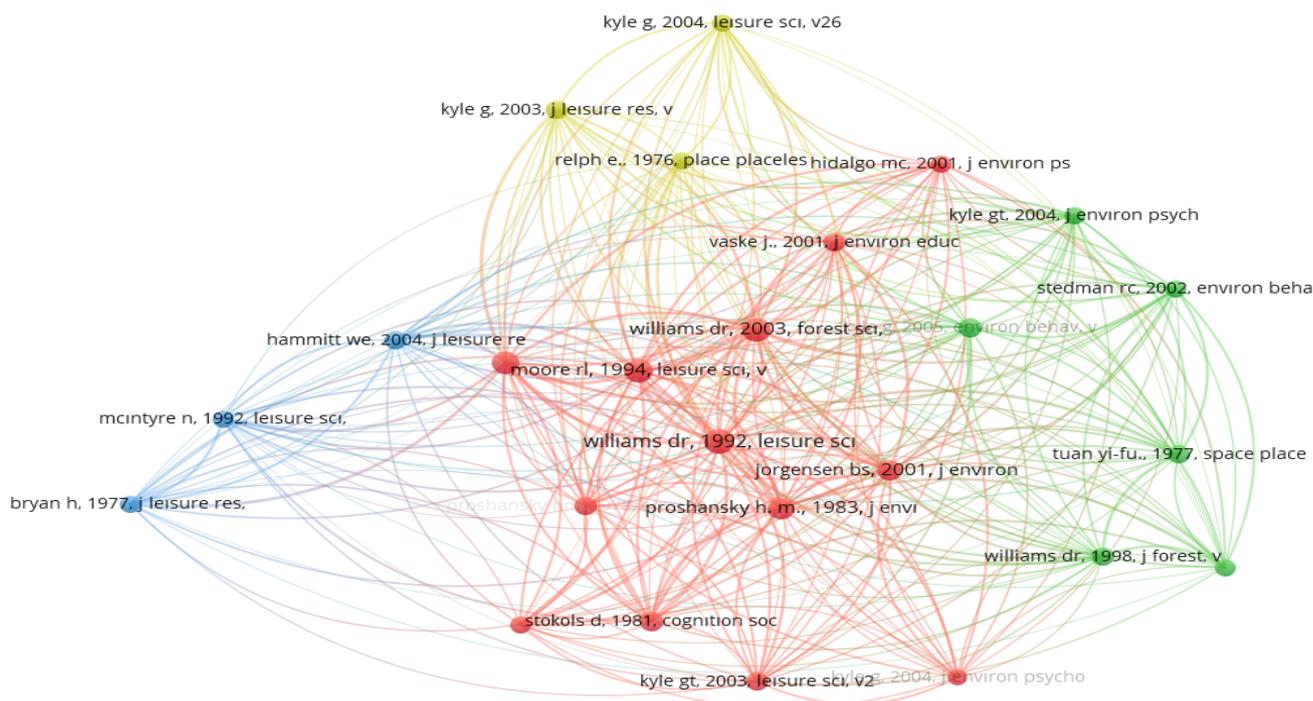


Figure 4. Reference Co-Citation Network

Table 5. Reference Co-Citation Analysis Findings

N	Researcher	Article	Journal	Year	Ref	Total link strength
1	Williams, DR; Patterson, ME; Roggenbuck, JW Watson, AE	Beyond the Commodity Metaphor - Examining Emotional and Symbolic Attachment to Place	Leisure Sciences	1992	42	40
2	Moore, RI; Graefe, AR	Attachments to Recreation Settings - The Case of Rail-Trail Users	Leisure Sciences	1994	38	38
3	Williams DR; Vaske, JJ	The Measurement of Place Attachment: Validity and Generalizability of a Psychometric Approach.	Forest Science	2003	35	35
4	Bricker, KS; Kerstetter, DL	Level of Specialization and Place Attachment: An Exploratory Study of Whitewater Recreationists	Leisure Sciences	2000	34	34
5	Proshansky, HM; Fabian, AK; Kaminoff, R	Place identity: Physical World Socialisation of the Self.	Journal of Environmental Psychology	1983	30	30
6	Jorgensen, BS; Stedman, RC	Sense of Place as an Attitude: Lakeshore Owners' Attitudes Toward Their Properties.	Journal of Environmental Psychology	2001	27	27
7	Kyle, G; Graefe, A.; Manning, R.	Testing the Dimensionality of Place Attachment in Recreational Settings.	Environment and Behavior	2005	23	23
8	Vaske, J; Kobrin, KC	Place Attachment and Environmentally Responsible Behavior.	The Journal of Environmental Education	2001	20	20
9	Kyle, G; Graefe, A.; Manning, R., Bacon, J.	An Examination of the Relationship between Leisure Activity Involvement and Place Attachment among Hikers along the Appalachian Trail.	Journal of Leisure Research	2003	19	19
10	Proshansky, HM.	The City and Self-Identity.	Environ. and Behavior	1978	19	19
11	Williams, DR; Stewart, SI	Sense of Place: An Elusive Concept that is Finding a Home in Ecosystem Management.	Journal of Forestry.	1998	19	19
12	Hammitt, WE; Backlund, EA; Bixler, RD	Experience Use History, Place Bonding and Resource Substitution of Trout Anglers During Recreation Engagements.	Journal of Leisure Research	2004	19	19
13	Kyle, GT; Mowen, AJ; Tarrant, M	Linking Place Preferences with Place Meaning: An Examination of the Relationship Between Place Motivation and Place Attachment.	Journal of Environmental Psychology	2004	18	18
14	Kyle, GT; Absher, JD; Graefe, AR	The Moderating Role of Place Attachment on the Relationship Between Attitudes Toward Fees and Spending Preferences.	Leisure Sciences	2003	19	18
15	Stedman, RC	Toward a Social Psychology of Place: Predicting Behavior from Place-Based Cognitions, Attitude, and Identity.	Environment and Behavior	2002	18	18
16	Hidalgo, MC; Hernandez, B	Place Attachment: Conceptual and Empirical Questions.	Journal of Environmental Psychology	2001	18	18
17	Warzecha, CA; Lime, DW	Place Attachment in Canyonlands National Park: Visitors' Assessment of Setting Attributes on the Colorado and Green Rivers.	Journal of Park & Recreation Administration	2001	17	17
18	Mcintyre, N; Pigram, JJ	Recreation Specialization Re-examined: The Case of Vehicle-Based Campers.	Leisure Sciences	1992	16	16
19	Stedman, RC	Is it just a Social Construction? The Contribution of the Physical Environment to Sense of Place.	Society & Natural Resources	2003	18	15
20	Bryan, H.	Leisure Value Systems and Recreational Specialization: The Case of Trout Fishermen	Journal of Leisure Research	1977	16	15

a 38.00 total link strength. Outdoor recreation (15 views; 14 total link strength), sense of place (11 views; 11 total link strength) and place meaning (10 views; 9 total link strength) are the other important keywords.

4.6. Co-Citation

Co-citation analysis was conducted to analyze the network relationships between influential articles in the field of recreation. Through this analysis, it is possible to examine the contribution of different disciplines in an interdisciplinary field, such as recreation. Co-citation analysis is taken into account

when two items (author, journal or article) are cited simultaneously in a third study because they appear together in the new reference lists (Garrigos-Simon et al., 2019). Figure 4 shows a reference common network consisting of five references (nodes) and four clusters (the threshold value in the study was taken as 15). Nodes in the network represent cited references, and the size of a node is proportional to the number of citations received by cited references.

As can be seen in Table 5, Williams, D. R., Patterson, M.E, Roggenbuck, JW and Watson, A.E. (1992) 'Beyond the Commodity Metaphor: Examining Emotional and Symbolic Attachment to Place' article has the highest

and connections for place knowledge. To be more specific, the results obtained from the study determined the development of the knowledge produced in the field and the social structure in this field. Therefore, this enriches knowledge on the subject and contributes to academicians.

As a result of the analysis made within the scope of the study, it can be seen that studies examining the relationship between recreation and place started with one article, which was published in 1992. According to the findings, while attention in the field was very limited in the 1990s, it was observed that this attention started to increase after 2010. The interest of academics in recreation and place was probably increased due to the knowledge of individuals' behavioural patterns in service businesses, determined by various characteristics of place (Bitner, 1992; Wakefield & Blodgett, 1996; Donovan & Rossiter, 1982; Turley & Milliman, 2000). In other words, in the field of recreation, the view that place is the determinant of the individual's behaviour (Stedman, 2002) started to be examined in 1992 and, after 2010, it became widespread and accepted knowledge.

From the results obtained from the research, it can be seen that the relationship between place and the individual in the context of recreation is associated with various themes, such as attachment to place, sense of place and place meaning. These themes may be expressed as the dominant and main topics of research in the field of recreation. Environmental psychology researchers state that the relationship between individual and place stems from an emotional memory that causes people to attach to place and to attribute meaning to it (Hammit, Backland, & Bixler, 2006). Therefore, psychological processes, such as attachment, meaning, and sense of place are seen as important sources of motivation for individuals to choose a particular place in recreation research (Young, 2007; Prayag & Lee, 2018). In this context, recreation researchers tend to understand this complex relationship between the individual and place and to increase their knowledge of the subject. Besides, the prominence of certain themes, such as place attachment, identity, and meaningfulness shows that researchers in the field of recreation move away from the traditional approach and adopt the idea that the place is a more dynamic and social structure, and it follows the post-modern perspective.

The current research findings reveal that 302 researchers, who researched recreation and place, prepared 148 articles for publication, either in cooperation with each other or individually. Besides, it was noted that researchers collaborate with researchers working in different disciplines to reach a miscellaneous approach. This increasing structure of collaboration may reflect an increase that accompanies the trend to produce more quantitative and empirical studies in this field. These research studies reveal the multidisciplinary structure in the

field of recreation (Merigó, Mulet-Forteza, Valencia, & Lew, 2019). However, it can be seen that studies based on both geographical and architectural fields are insufficient (Wolfe, 1964; Hall & Page, 2014).

According to the findings of the keyword co-occurrence analysis, the researches focused on certain themes, such as place attachment, leisure time involvement, specialization, motivation, serious leisure time, gender, climate change, environmental responsibility, biodiversity, environmental conditions, environmental protection behaviour, outdoor recreation, and nature-based tourism. Place attachment and involvement themes have been studied in the field of environmental psychology and psychology for many years. However, issues such as climate, climate change, biodiversity and environmental protection are relatively new, therefore, it seems that there is a gap in the field. On the other hand, social capital, social environment, youth, health and therapeutic recreation themes have been identified as subjects that are open to examination by researchers. Mapping bibliographic data can provide useful information on the current state of place information research concerning themes that have not received enough research attention to date. The data obtained in this research has the potential to assist in identifying and addressing key gaps in place research in recreation.

The bibliometric analysis findings of this research emphasize past and current research activities on place research in the field of recreation. These findings may guide researchers in newly developing fields. Furthermore, they can provide answers to important questions that researchers should consider when focusing on a research study regarding the recreationist-place relationship and interaction in the recreation field. In particular, the research results can help pinpoint gaps in the field and better explore factors that specifically influence publication trends. Besides, based on the fact that recreationists establish an emotional connection with the places where they realize their experiences, recreation managers and local/national administrations should pay attention to the planning and promotion of the places.

As in other studies, this research also has limitations. First of all, the research data was obtained from a single database. Other databases may be included for a more detailed and comprehensive study in future research. Second, the data collection stage was limited to the category of 'accommodation, leisure time, tourism, and sports. When these limitations are removed in future studies, and other categories are included in the research, the multidisciplinary approach tendency in the field can be analyzed. Third, future studies may analyze books, conference papers, and other publications other than research articles. Besides, researchers could apply advanced bibliometric analysis, including research methods, author keyword cluster analysis, and citation score analysis, to better understand the evolution of place research in recreation.

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