

Holistic Analysis of Recreation and Leisure Science in Sports

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Original Article

Received: 21.09.2023

Accepted: 08.02.2024

DOI: 10.47778/ejsse.1364211

Published: 31.03.2024

Abstract

The aim of this research is to analyse scientific publications between 1980-2020 and to make a holistic analysis on recreation and leisure science in sports. Using the data obtained within the scope of the study, information graphics and explanatory bibliometric networks that reveal bibliometric networks were created. According to the results obtained from the study, the most used keywords were found to be "recreation", "leisure" and "sport/s". Citation analysis reveals that Lee, Powell and Iwasaki are the most cited authors. There are a total of 475 journals in the data. Leisure Sciences, Journal of Leisure Research and Annals of Leisure Research, are the most cited journals. Griffith University (Australia), University of Illinois (USA) and University of Sydney (Australia) were the leading publishers. It can be stated that the concepts used in leisure and recreation studies focus on physical activity, that the majority of the tourism sector is aimed at the long-term area, that it focuses on theses and government policies to increase participation in physical activity, and that it contains arguments for the development of social theories and practical applications.

Keywords: Bibliometric, Holistic analyse, Leisure, Recreation, Sports

Sporda Rekreasyon ve Boş Zaman Biliminin Bütünsel Analizi

Öz

Bu araştırmanın amacı, 1980-2020 yılları arasındaki bilimsel yayınları analiz etmek ve sporda rekreasyon ve boş zaman bilimi üzerine bütüncül bir analiz yapmaktır. Çalışma kapsamında elde edilen veriler kullanılarak bibliyometrik ağları ortaya koyan bilgi grafikleri ve açıklayıcı bibliyometrik ağlar oluşturulmuştur. Çalışmadan elde edilen sonuçlara göre en çok kullanılan anahtar kelimelerin "rekreasyon", "boş zaman" ve "spor/lar" olduğu tespit edilmiştir. Atıf analizi, Lee, Powell ve Iwasaki'nin en çok atıf alan yazarlar olduğunu ortaya koymaktadır. Verilerde toplam 475 dergi bulunmaktadır. Leisure Sciences, Journal of Leisure Research ve Annals of Leisure Research, en çok atıf alan dergilerdir. Griffith Üniversitesi (Avustralya), Illinois Üniversitesi (ABD) ve Sydney Üniversitesi (Avustralya) önde gelen yayıncılardır. Boş zaman ve rekreasyon çalışmalarında kullanılan kavramların fiziksel aktiviteye odaklandığı, turizm sektörünün çoğunluğunun uzun vadeli alana yönelik olduğu, fiziksel aktiviteye katılımı artırmaya yönelik tezlere ve hükümet politikalarına odaklandığı, sosyal teorilerin ve pratik uygulamaların geliştirilmesine yönelik argümanlar içerdiği ifade edilebilir.

Anahtar Kelimeler: Boş zaman, Bibliyometri, Bütüncül analiz, Rekreasyon, Spor

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INTRODUCTION

Scientists contribute knowledge production in the process of improving information created by authors and practitioners in terms of discourse and concept. The knowledge produced is spread to field literature via conference proceedings, books and journals. In this way, knowledge produced defines the field generally and a “universe of discourse” is provided to arise. Concepts, definitions and programs accepted as the common subject are the basis on which the field is defined. The body of knowledge created from these expressions contributes to the formation of field-specific skills, basic concepts, terms and usage areas, and program curricula. This conceptual index created through researches is a guide for fieldworkers to perform their jobs in the best manner. It also supports the interactive expansion of the field of study and the generation of new knowledge. With these researches, it will be useful to identify the current situation in new fields such as physical education, sports (Gümüş et al., 2020) and recreation management (Merigó et al., 2020) to identify the literature and to update the field by identifying its limitations, deficiencies and weaknesses.

The term of scientometry, suggested by Nalimov, is used to describe the growth of scientific studies, to reveal the structure of the field, to determine the interrelationships between authors and the productivity situation (Hood & Wilson, 2001; Nalimov 1960). Bibliometric analysis is a field of study based on counting, and it is the examination of the outputs of published books, journals, articles and citations using mathematical and statistical techniques (Al & Coştur, 2007; Meho, 2007; Pritchard, 1969; Yıldırım & Demir, 2019). Bibliometric analyses can be descriptive (determining the number of articles and books published in a given year), or evaluative (conducting a citation analysis that reveals how an article has affected) (Kurutkan et al., 2017). By means of this analysis it is possible to examine the data such as articles, subjects, referred authors and referred resources (Zarifm Mahmoudi et al., 2013) and to reveal an overall structure belonging to a certain discipline in the light of the obtained statistical results (Çetinkaya-Bozkurt et al., 2016). Reference data is stated as evidence of how many times an article has been read by other researchers and if it is used or not. Methods such as reference analysis and rate, impact factor and the rate of article admission that are commonly used in bibliometric analyses are also used in the qualitative evaluations of the academic journals (Lee et al., 2002). Such a review also forms a basis for the improvement of new methods and techniques, and sheds light to further studies. Bibliometric analysis is used to perform this review (Yersüren & Özel, 2020). According to the descriptive data revealed by bibliometric analyses, a provision is created for the concepts of "leisure" and "recreation", which are the main subjects of the study, and it has guiding features for new studies.

The terms 'leisure' and 'recreation' have many definitions. Since there are many studies related to the determination of the written rules of the 'leisure' concept and its definition, it can be difficult to find a commonly agreed single definition of the concept of 'recreation' (Madrigal, 2006). Recreation can be described as various activities that individuals engage in in their free time, within the framework of their own physical conditions, depending on their wishes, and which they obtain

individual satisfaction (Lamanes & Deacon, 2019; Sivan & Ruskin, 2000). Recreation is a concept that emerges in leisure because recreation is first of all related to the activities that people who have free time will do during this free time (Atasever & Çolak, 2019).

Leisure studies developed in the 1960s. Pioneers such as Brightbill and Nash explained the meaning and assumptions of the concept in terms of social philosophy (Iwasaki et al., 2007; Neulinger, 1981). Leisure is usually conceptualised in terms of free time, non-demanding activity, space and place, psychological experience, or a combination of these (Henderson, 2008; Ito et al., 2014; Parker, 1988). The definition of leisure in the literature is stated as the time period when people are totally free after they completed the compulsory needs in non-working time since individuals divide their time into two as working time and non-working time. In another expression, it is stated that leisure can change depending on the freedom of life of individuals in life (Howe & Carpenter, 1985). Leisure activities are defined as participating activities except for job voluntarily for pleasure (Soysal et al., 2018). Recreation and sports activities performed in leisure are the fields that have been drawing attention recently. Leisure activities are generally accepted as a part of daily life (Chang & Gibson, 2011) since sports constitute one of the most comprehensive, diverse and interesting fields of recreation (Metin et al., 2013). While sports provide an important motion in meeting the recreational needs of individuals, recreation also plays important roles in the advancement of sports in society and in achieving athletic success. Therefore, it is seen that sports and recreation mutually affect each other (Öztürk, 1998).

The concepts of recreation, leisure and sports are among the topics that have been researched recently. This research firstly provides a guidance for potential researchers about knowledge via the condition of literature. It also aims to contribute the determination of the topics missing in the literature, the key words used in researches, author interactions, focal point to be determined in further researches and etc. (Singh et al., 2023; Tabuk, 2022; Tabuk, 2023; Yerlisu-Pala & Köse, 2021).

Finally, this study will contribute to what should be focused on in the development process of academic publications specific to the field and to the prevention of repetition of information in the literature by revealing the development process of the field of study. The objective of this study is to contribute to scientific field by revealing the bibliometric analysis of all scientific studies related to the sports, recreation and leisure science conducted between the years of 1980 and 2020.

METHOD

Bibliometric Analysis

In the research, the change provided by the recreation and leisure science-based researches in sports has been tried to be revealed, starting from the concepts of recreation, entertainment and sports. To this end, the publication years of the researches, reference change by years, authors, universities and the country publishing most have been identified to the profile, and the publications have been tried to be identified according to WOS (Web of Science) categorization. Bibliometric analyses enable the creation of the data that contribute the improvement of the interaction between countries and universities or supportive institutions by determining the researchers who publish most in the research field, academic journals and the most used keywords (Tabuk, 2022; Yıldız, et al., 2022). In addition, they also define important indicators such as especially author reference indices (h and q indices) in the creation of the performance data that reveal the productivity of countries, universities or authors (Merigó et al., 2020). Bibliometric analyses enabling the creation of descriptive statistical data have an important role in interpreting scientific publications qualitatively and revealing the data that will contribute the science field. By this means, it is tried to ensure effectiveness in the use of labour and resources for research (Al et al., 2012).

It is believed that the new scientific documents revealed via researches try to direct the improvement of science. Rapidly produced knowledge is stated as the process of examining and evaluating the data obtained in the process of document analysis (Bowen, 2009). Document analysis is the examination and evaluation process for improving and interpretation of the experimental knowledge (Corbin & Strauss, 2008).

The key words of “recreation”, “leisure” and “sport/s” are used for bibliometric analysis in this research. The terms used in the review performed in accordance with the selected key words take part in the article title, key words or abstract. The words used in the review have been determined in accordance with the literature and they are defined as an important condition in restricting the field specific studies. Only WOS data base has been included in the study. Data analysis was performed in December 2021. The research is limited with the scientific researches published between the years of 1990 and 2021. Due to the rapid change in the production of scientific knowledge, it is predicted that different results may be obtained in future researches (Liu et al., 2013).

The study was conducted using the Thomson Reuters Web of Science database (Thomson Reuters, NY, USA) titled “Web of Science Core Collection” (n=475), related to recreation and leisure science in sports. Recreation, leisure, sports and sport keywords were scanned on topic for the search including all publications between 1980 and 2020. The first publication was in the year of 1982. Documents published in England, Scotland and Ireland were collected under United Kingdom (UK) title. United Nations’ classification system was used to categorize the countries (United Nations, 2019). We generated info-graphics revealing bibliometric networks by using revealing bibliometric networks (Vosviewer n.d.).

RESULTS

Science categories, publication year and article types.

A total of 475 articles published during a period of 1980-2020 is found in our basic search. Most researched areas of recreation and leisure science in sports are found to be Hospitality Leisure Sport Tourism, Sociology and Public Environmental Occupational Health (34.94%, 10.73 and 10.52 Table 1). There is an increase in the number of publications after 2015. The most publications in the field of recreation were made in 2019 (n=54 Figure 1). The most common document types of the literature were article, proceedings paper, early access, review and editorial material (84.00%, 12.42, 4.00, 2.52 and 1.68 respectively; Table 2).

Table 1. Most researched areas of recreation and leisure science in sports literature between 1980 and 2020

Web of Science Categories	Records count	Percentages
Hospitality Leisure Sport Tourism	166	34.94
Sociology	51	10.73
Public Environmental Occupational Health	50	10.52
Sport Sciences	46	9.68
Education Educational Research	34	7.15
Rehabilitation	33	6.94
Management	21	4.42
Social Sciences Interdisciplinary	21	4.42
Environmental Studies	16	3.36
Environmental Sciences	15	3.15

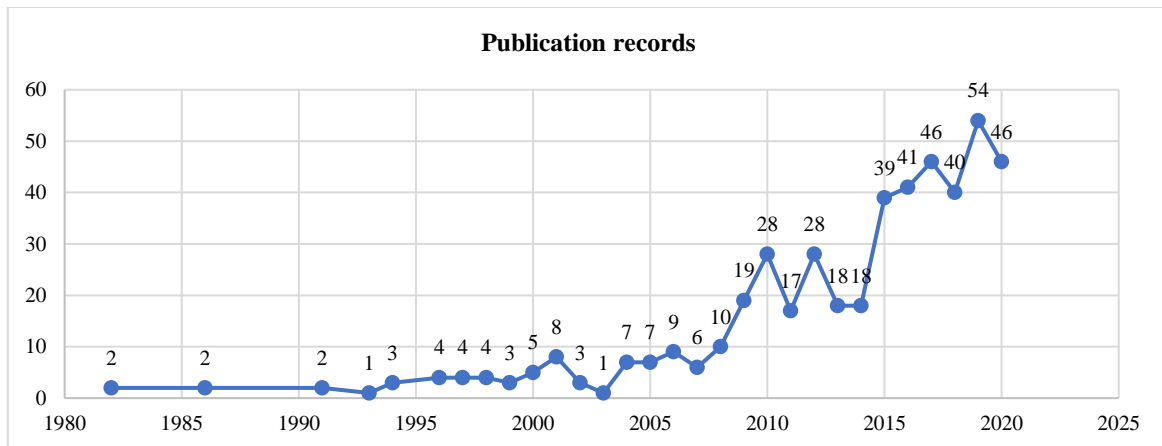


Figure 1. Total number of publications of recreation and leisure science in sports literature

Table 1. Document types of recreation and leisure science in sports literature between 1980 and 2020

Document Types	Records count	Percentages
Article	399	84.00
Proceedings Paper	59	12.42
Early Access	19	4.00
Review	12	2.52
Editorial Material	8	1.68
Book Chapter	5	1.05
Book Review	3	0.63
Book	1	0.21
Total	475	100

Authors Productivity, Countries, Meetings, Universities and Journals

A total of 475 researches in recreation and leisure science in sports are determined. As seen in the Table 3, it is observed that the authors named Bauman (7), Funk (6) and Merom (5) lead the researches. The USA took part in the first conversation with 140 articles followed by Australia, Canada, United Kingdom and Peoples Republic of China (140, 66, 62, 41 and 19 Figure 2). When congress publications are examined, it is seen that main themes were civil engineering, sports and physical education and recreation and landscape protection. No significant difference in terms of number of publications are recorded. 475 studies are excluded in the results according to the WoS database count (Table 4). In terms of universities contributing to the recreation and leisure science in sports literature, Australia is leads with the highest number (n=12 Table 5) of publications. Australia has 5 universities in top ten list. In this issue the most contributing journals are Leisure Sciences, Journal of Leisure Research, Annals of Leisure Research, Loisir et Société / Society and Leisure and Journal of Park and Recreation Administration (n=19, 15, 11, 11 and 10 respectively Table 6).

Table 3. Top ten authors indexed in Web of Science database between 1980 and 2020

Authors	Records Count	Percentages
Bauman A.	7	1.47
Funk D. C.	6	1.26
Merom D.	5	1.05
Taylor T.	5	1.05
Darcy S.	4	0.84
Eime R. M.	4	0.84
Martin Ginis K. A.	4	0.84
Harvey J. T.	4	0.84
Henderson K. A.	4	0.84
Ainsworth B. E.	3	0.63

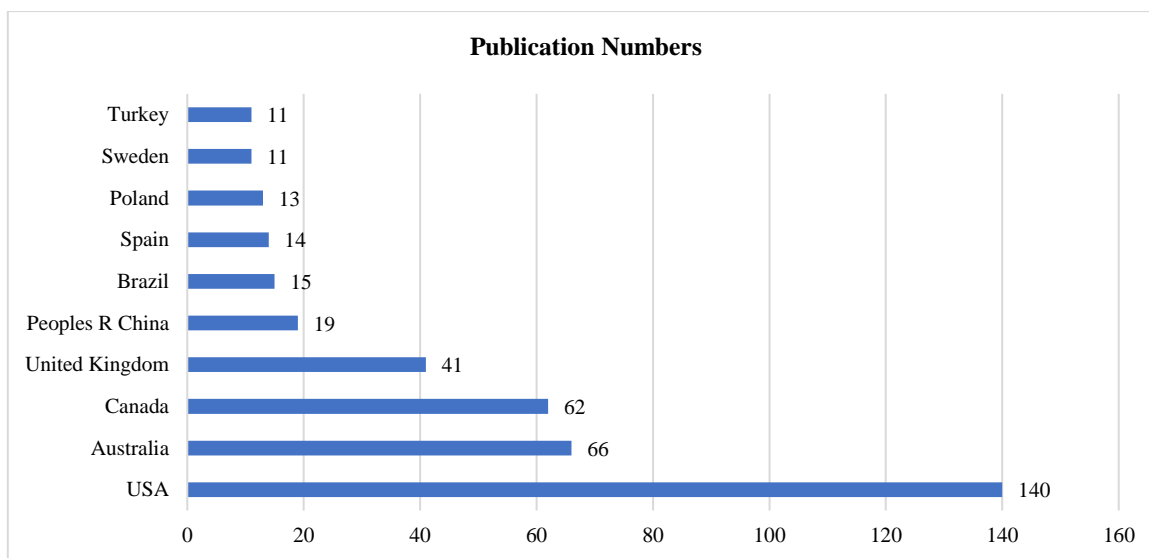


Figure 2. Top ten Countries indexed in databases between 1980 and 2020

Table 4. Top ten meetings indexed in Web of Science database between 1980 and 2020

Meeting Titles	Records count	Percentages
3rd World Multidisciplinary Civil Engineering Architecture Urban Planning Symposium WMCAUS	3	0.63
21st Pan Asian Congress of Sports and Physical Education	2	0.42
4th International Scientific Conference on Kinesiology	2	0.42
Conference on Public Recreation and Landscape Protection with Nature Hand in Hand	2	0.42
11th International Scientific Conference on E Learning and Software For Education Else	1	0.21
11th ISSAT International Conference on Reliability and Quality in Design	1	0.21
13th International Scientific Conference on Public Economics and Administration	1	0.21
15th World Conference of The Associated Research Centres for The Urban Underground Space Underground Urbanization as a Prerequisite for Sustainable Development ACUUS	1	0.21
16th International Multidisciplinary Scientific Geo conference SGEM 2016	1	0.21
1998 North eastern Recreation Research Symposium	1	0.21

Table 5. Ten most productive institutions in recreation and leisure science in sports literature between 1980 and 2020

Universities	Records count	Percentages
Griffith University, (Australia)	12	2.52
University of Illinois, (USA)	10	2.10
University of Sydney, (Australia)	10	2.10
Victoria University, (USA)	9	1.89
Deakin University, (Australia)	8	1.68
Temple University, (USA)	8	1.68
University of Florida, (USA)	8	1.68
University of Technology Sydney, (Australia)	8	1.68
University of North Carolina, (USA)	7	1.47
Monash University, (Australia)	6	1.26

Table 6. Top ten most productive journals in recreation and leisure science in sports literature between 1980 and 2020

Source Titles	Records count	Percentages
Leisure Sciences	19	4.00
Journal of Leisure Research	15	3.15
Annals of Leisure Research	11	2.31
Loisir et Société / Society and Leisure	11	2.31
Journal of Park and Recreation Administration	10	2.10
Leisure Studies	9	1.89
Managing Sport and Leisure	7	1.47
South African Journal for Research in Sport Physical Education and Recreation	7	1.47
Journal of Physical Activity Health	6	1.26
Disability and Rehabilitation	5	1.05

Citation Analyses

475 articles have 6935 citations were detected, which were separated out of the authors' own citations. The most cited document was an original article titled “Associations of light, moderate, and vigorous intensity physical activity with longevity: The Harvard alumni health study written by Lee and Paffenbarger. This article is published in 2000 and received citations 364 times (16,55 times per year; Table 8).

Table 7. h-index and citation changes of recreation and leisure science in sports literature between 1980 and 2020

WoS Database Publication Period	n	h-index	Sum of citation without self-citations	Sum of citing articles without self-citations
1980-1989	4	1	2	2
1990-1999	21	11	369	367
2000-2009	75	29	3392	3215
2010-2020	375	30	3237	2949
1980-2020	475	41	6935	6242

Table 8. Ten most cited articles of recreation and leisure science in sports literature between 1980 and 2020

Title	Authors	Year	Total Citations *	Average citations per year**
Associations of light, moderate, and vigorous intensity physical activity with longevity - The Harvard alumni health study	Lee, I. M. & Paffenbarger, R.S.	2000	364	16,55
Availability of physical activity-related facilities and neighbourhood demographic and socioeconomic characteristics: A national study	Powell, L. M., et al.	2006	308	19,25
Examining relationships between leisure involvement, psychological commitment and loyalty to a recreation agency	Iwasaki, Y., & Havitz, M.E.	2004	190	10,56
Evaluation of the Kaiser Physical Activity Survey in women	Ainsworth, B. E., et al.	2000	182	8,27
Rush as a key motivation in skilled adventure tourism: Resolving the risk recreation paradox	Buckley, R.	2012	162	16,2
Mountaineering adventure tourists: a conceptual framework for research	Pomfret, G.	2006	159	9,94
Age differences in the relation of perceived neighbourhood environment to walking	Shigematsu, R., et al.	2009	156	12
Exploring origins of involvement: Understanding the relationship between consumer motives and involvement with professional sport teams	Funk, D.C., et al.	2004	133	7,39
Leisure time physical activity in a population-based sample of people with spinal cord injury part I: Demographic and injury-related correlates	Martin-Ginis, K. A., et al.	2010	125	10,42
Assessing hierarchical leisure constraints theory after two decades	Godbey, G., et al.	2010	123	10,25

Note: * Most cited publications and ** Documents with the highest citation average by year.

Keyword and Bibliometric Network Analysis

Keyword analysis (Table 8) reveals that “recreation”, “physical activity”, “leisure”, “sport” and “sports” (n=167, 54, 47, 43 and 27, respectively Table 9) are most commonly used. We performed a holistic bibliometric network analysis and created info graphics by using VOSviewer. Results show us three keyword centres are seen in the literature. These are “recreation”, “leisure” and “sport/s”. As a main keywords recreation and leisure are in the central of network linked to the other keywords.

Table 9. Most used 30 keywords on the literature related to recreation and leisure science in sports

Keywords (Total Link Strength)					
1	Recreation (67)	11	Motivation (11)	21	Quality of life (6)
2	Physical activity (51)	12	Health (10)	22	Social participation (6)
3	Leisure (47)	13	Leisure (10)	23	Sport participation (6)
4	Sport (43)	14	Tourism (10)	24	Youth (6)
5	Sports (27)	15	Leisure constraints (9)	25	Benefits (5)
6	Participation (18)	16	Outdoor recreation (9)	26	Built environment (5)
7	Exercise (17)	17	Gender (8)	27	Education (5)
8	Leisure activities (15)	18	Adolescents (7)	28	Identity (5)
9	Disability (13)	19	Rehabilitation (7)	29	Physical education(5)
10	Constraints (12)	20	Serious leisure (7)	30	Quality of life (6)

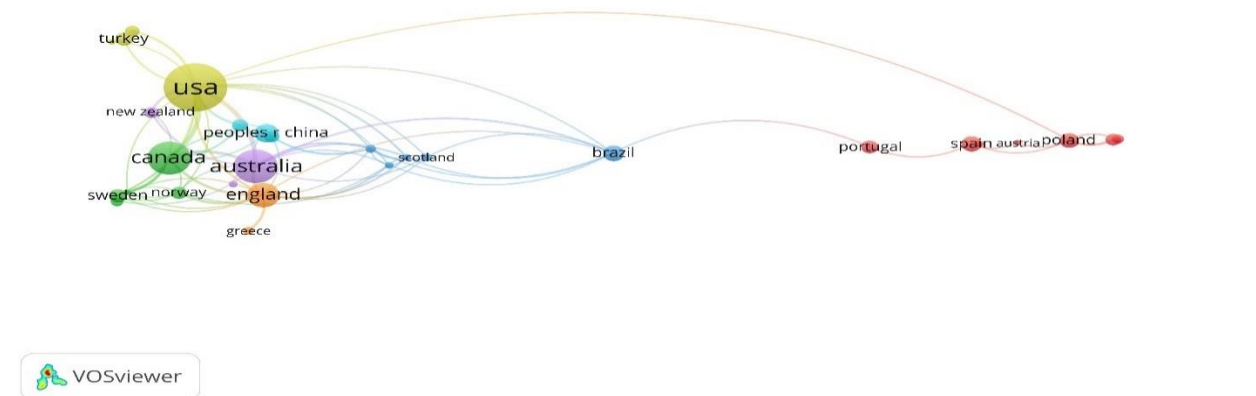


Figure 3. Bibliometric network of the countries publishing recreation and leisure science in sports

DISCUSSION AND CONCLUSION

In this study, a bibliometric analysis is conducted in order to reveal relationships between concepts in keywords and abstracts, the most cited authors, the most cited journals and the countries with the most academic studies in recreation and leisure science in sports studies. H-Index of this issue was measured as 41 with a total number of 6935 citations. A strong correlation between “recreation” and “leisure” keywords is identified.

Results show that most used keywords are “recreation”, “leisure” and “sport/s”. Citation analysis reveals that Lee, Powell and Iwasaki are the most cited authors. There are a total of 475 journals in the data. Leisure Sciences, Journal of Leisure Research and Annals of Leisure Research, are the most cited journals. Top publishing universities are Griffith University (Australia), University of Illinois (USA) and University of Sydney (Australia).

An examination of the articles on leisure and recreation that have contributed to the literature and have been cited shows that they are linked to a wide range of subjects and that the results are varied. The most cited researches are those, respectively, carried out on the relationship between physical activities and body health (Lee & Paffenbarger, 2000), state policy for physical activity facilities (Powell et al., 2006), customer loyalty in the institutions organizing physical activities (Iwasaki & Havitz, 2004), physical activity level relations in women (Ainsworth et al., 1999), motivation factors in adventure tourism and recreation activities (Buckley, 2012), the leisure, life styles, risks and personal characteristic of the tourists interested in adventure tourism and mountaineering (Pomfret, 2006), the relations between perceived neighbourhood environment and physical activity (Shigematsu et al., 2009), the motive for joining a professional sports team (Funk et al., 2004), the leisure habits of the people having chronic diseases and spinal cord injuries (Martin-Ginis et al., 2010) and the theory of leisure limitations in the future (Godbey et al., 2010). Recreation, sport and leisure theories are treated in many aspects in the researches. It is observed that the concepts used in the studies of leisure and recreation are related to the concepts such as tourism, physical activity, post-model approaches and social theories (Merigó et al., 2020). Finally, the top publishing countries are Australia and the USA. Suggestions for authors are presented below, based on all our findings and literature discussion:

This study had some limitations. Firstly, we preferred only WoS Database. Further studies including more databases such as Russian Science Citation Index, SciELO Citation Index, PubMed, Scopus, Index Copernicus or DOAJ can be performed in the future. Secondly, due to insufficient bibliometric or scientometric studies in this field, we could not compare our outcomes with previous reports in the literature. Researchers should be encouraged and supported to carry out more articles in recreation and sports area.

Conflict of Interest: There are no personal or financial conflicts of interest in the study.

Authors' Contribution: Research design, data collection, statistical analysis, data interpretation, literature review-MET, literature review, article preparation-EÖK processes were carried out by the author's. The author has read and accepted the published version of the article.

Research Publication Ethics: This research was conducted using the document review method and includes studies published at <https://www.webofscience.com>. During the writing process of the current study, the scientific, ethical and citation rules within the scope of the "Directive on Scientific Research and Publication Ethics of Higher Education Institutions" were followed; no falsification was made on the collected data and this study was not sent to any other academic publication environment for evaluation.

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