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Research journey of sports promotion: A bibliometric analysis

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ABSTRACT

Background: Research on exercise and health promotion has grown significantly, indicating an increasing interest in physical fitness and healthy living among people. **Purpose:** This study aimed to to provide a comprehensive overview of research on health and sports promotion, identify the field, identify prominent papers and academics, and use keyword analysis to determine the thematic focus. This research hoped to contribute to understanding the emerging dynamics in this interdisciplinary sector. **Methods:** Bibliometric methods analyse data sets that include publication trends, author information, countries, and newly discovered keywords. This analysis used VOSviewer bibliometric analysis software. The data analysed was 1,850 documents. **Results:** The results showed a steady increase in publications on sports, physical exercise, and health promotion issues. The reputable publications are those in the "International Journal of Environmental Research and Public Health" and "BMC Public Health". Key phrases, such as "physical activity" and "health promotion" dominate the themes, with the United States and the United Kingdom emerging as important contributors. **Conclusion:** This study highlighted notable researchers, important sources, and concentrations of subjects in health and exercised promotion research, which underscored its dynamic nature. The knowledge gathered from this bibliometric research contributed to a more complex understanding of this interdisciplinary field's changing goals and trends. **Implications:** Thematic concentration and identifying important articles can inspire evidence-based strategies for global health and physical activity promotion, international collaboration, and future research orientation.

Keywords: Sports promotion; sports research; bibliometric analysis; global trends; scopus database

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INTRODUCTION

Considering the globalisation characteristics and demands, sports promotion positions play an important role in enhancing the global perception and attractiveness of the sports sector. Promotion and communication efforts were aimed at educating and convincing the target audience to finish a purchase (Sukamto & Primadini, 2023). Advertising, sales promotion, public relations and publicity, direct marketing, and personal selling are a few promotion indicators (Susilo et al., 2022). Regarding promotion, a memorable and positive experience proves to be more beneficial than any other kind (Damayanti et al., 2022). Public relations (PR) is necessary for both sectors to establish and maintain their brand among a large audience successfully (Hafiar et al., 2024).

The sports sector has drawn a lot of interest in marketing and promotion, along with technological advancements and media changes. Understanding how sports marketing affects PR and marketing communications has become more difficult due to the rise of social media platforms and shifts in consumer behaviour. Inside and outside the sports sector, consumer culture is greatly influenced by sports marketing, including sports sponsorship and marketing through sports (Recio Moreno et al., 2023). For sports organisations to successfully provide their clients with high-quality goods and services and adjust to business changes and obstacles, strategic sports marketing is essential (Crabtree & Zhang, 2022). Corporate objectives can be attained through social media and digital platforms, such as Instagram, for marketing campaigns and sports sponsorship (Cornwell, 2022). Furthermore, athletes and physical activity influencers on social media sites like Instagram have a big influence over their followers' decisions and views regarding health and physical well-being (Päkk & Karjaluoto, 2022). Effective marketing strategies in the sports business, in general, depend on a grasp of the interaction between sports marketing, public relations, and marketing communications in the context of social media and shifting consumer behaviour.

The significant advancement in media and technology today have caused major changes in promotional strategies, especially in sports. The emergence of digital technology has facilitated the growth of the sports service sector by allowing for the construction and optimisation of sports service structures at a high calibre (Liu et al., 2022). Furthermore, the utilisation of new media in the distribution of sports news has transformed how sports fans, athletes, teams, and media outlets communicate (Singla, 2023). Additionally, to meet the evolving needs of consumers, the retail sector—including sports

retail—must employ technology and innovative tactics (Bahir et al., 2023). Sports, media, and the economy have all been touched by these developments in technology and media, which have also affected the sports media complex (Bertling, 2021).

To effectively reach and engage audiences, the sports business has had to embrace new promotional methods due to technological and media improvements (Kim & Fusion, 2020). This phenomenon has become a passion and a driving force for increasing visibility and involvement in various sports and opening up new options. Sports can become a worldwide cultural phenomenon that engages people at all levels of society, transcends geographic boundaries, and drives global engagement through innovative technology and well-executed advertising techniques. To predict future development directions and optimise the global growth potential of the sports sector, it is important to have a thorough awareness of the evolution of sports promotion techniques and strategies.

Growth, development, and important advances in the sports industry affect not only the competitive side of competition but also influence marketing and promotion. These developments include the application of technology, economic integration, and industrial globalisation (Minchenko et al., 2022) which considers all its subject-object relations, taking into account the consequences of the COVID-19 pandemic, is substantiated. The formation of basic groups of subjects that are directly or indirectly related to the development of the sports industry is substantiated. The objects that influence the development of the sports industry are identified: personal and team results in specific sports competitions, athletes, sports events, infrastructure, coaching, e-sports industry and accompanying goods and services. A range of specific determinants (economic, political, demographic, social. The sports sector's expansion and progress, especially in producing sports goods and equipment, has been greatly helped by today's technological advances (Savić et al., 2018). Additionally, there are two main types of marketing in sports, which are sponsorship-related marketing and sports marketing, both of which impact consumer culture inside and outside of sports (Cornwell, 2022). These developments have influenced the sports sector and its marketing and advertising strategies, resulting in major changes in how society views sports. In addition, the impact of the sports industry on social and economic development goals in developing countries has begun to be widely researched (Li et al., 2022). Promoting sports development programmes and increasing sports participation can be achieved through marketing communications methods

(Kumari, 2019).

Another impact of sports can be recognised in the improved public relations, from athletes, coaches, managers, officials, spectators, and sponsors. This is perceived as a soft power instrument that influences a country's reputation and image abroad (Yanukov & Bahturidze, 2022). Sports events foster diplomatic relations and improve the economy (Gulmatova, 2022). Sports organisations use information subsidies more frequently due to accelerating changes in the conventional dynamics of sports communication (Dottori et al., 2022). It is also recognised that there is a relationship between a country's level of economic development and its sporting achievements (Lee et al., 2022). In addition, although receiving little attention in scientific studies, it requires public relations (Kautz, 2018).

Sports marketing allows advertisers to capitalise on the popularity and focus of sports to advertise goods or services or to encourage healthy living (Kravchenko & Pogrebnyi, 2023. Through sports marketing, advertisers can effectively capitalise on sports fans' immense popularity and passionate interest, promoting a wide range of products and services or supporting programmes related to healthy living. Marketers can connect their brand messaging with the ardour of sports by forming strategic alliances with sports teams, athletes, and significant sporting events. Sports marketing is more than just product promotion. It is a way to promote healthy living choices by blending messaging about fitness, wellness, and general health consciousness. This dynamic junction of sports and marketing increases brand visibility by pushing ideas that speak to a wide range of consumers. It gives advertisers the power to contribute to societal well-being meaningfully. The undertaken audience engagement and forms of promotion have benefited from marketing plans, which are based on big data technology and contemporary sports marketing theory (Chen, 2023). The presence of fans at televised sporting events has a beneficial effect on the event's reputation, corporate brand credibility, and image, as well as influences purchasing decisions (Rai et al., 2024). It has been found that having spectators at televised sports events produces benefits beyond the thrill of the moment. This phenomenon has a favourable impact on several factors, such as the event's reputation, the legitimacy of the business brand, and overall image. It also affects consumer behaviour, influencing decisions about what to buy in ways that highlight the importance of sports spectatorship. Essentially, the existence of fans at broadcast sports events establishes a mutually beneficial relationship in which the good vibes and excitement they generate improve not only the event itself but

also the standing, legitimacy, and image of related corporate brands, ultimately consumer behaviour and purchase choices.

Everyone can benefit from price promotions during popular events, which can also help manufacturers and sellers (Wu et al., 2022). This phenomenon encourages the sports industry to adopt long-term marketing and promotional strategies. Sports businesses must have a comprehensive and adaptable strategy to adapt to evolving consumer preferences and market trends in light of this phenomenon. This encourages the industry to put long-term marketing and promotion plans into action. Gaining a comprehensive grasp of the consumer data produced by big data technology is essential to creating relevant and effective strategies. By utilising variables like social trends, demographic preferences, and consumer behaviour research, the sports industry may improve its competitiveness in an ever-expanding global market, fortify relationships with its audiences, and maximise the fan experience. Therefore, it is crucial for players in the sports industry to continue innovating in marketing and promotional methods to attain long-term sustainability and success.

Sports promotion has developed rapidly, but several challenges, controversies, and problems remain. Fan engagement with sports has evolved due to changes in media consumption habits, particularly with the introduction of digital technology. Conventional strategies of marketing sports through big spending and high-quality ingredients may be less effective today (Fujak et al., 2022). The rise of social and digital media has changed how consumers express their brand preferences and facilitated consumer unity around a particular topic or company. Mass-based communities gain followers more effectively, and branded content loses its significance (Wahid & Sultana, 2023). Technological advances have greatly impacted sports progress, as evidenced by the use of contemporary information technology in competitions and fan communications (Antanas & Sidlauske, 2022). Sports managers must identify existing and new problems, develop workable plans, and use technological improvements to effectively manage the global sports business (Veselinović et al., 2022). Additionally, it may be difficult for leagues, teams, and athletes to compete with one another for the public's attention. Broadcast rights issues, brand management and the financial impact of marketing tactics are also hot topics in the sports sector. Part of the league's and teams' financial business plans is the sale of both domestic and national media rights (Fortunato, 2018). Sports finance regulations can protect winning clubs and create barriers to entry, among other planned and unforeseen

consequences to competitiveness in sports (Budzinski, 2019). In the sports sector, television revenues are becoming increasingly significant. However, competition between sporting events can hurt viewership and a network's return on spending (Pagels, 2018). Physical health, safety, and activities that maximise athletes' earnings sometimes conflict in professional sports (Macdonald, 2000).

In the framework of this research, "sports promotion" refers to a set of actions intended to increase the profile, attractiveness, and brand value of a team, athlete or sporting event. It discusses sponsorship, social media strategy, digital marketing, brand activation, and advertising campaigns. Sports promotion is a complex field that includes a range of strategic initiatives designed to increase the awareness of a sports team, athlete, or event while strengthening its general appeal and brand value. When particular elements are examined, sponsorship is a critical component that offers financial support and fosters mutually beneficial connections between companies and the sporting organisations they support. Social media platforms allow voices to be amplified and reach a wide audience for free (Dorgan, 2023). The sports services business now has greater prospects thanks to the growth and optimisation of the sports services structure made possible by the rise of digital technology (Qian et al., 2023). Sports services are becoming more digitally accessible, which opens up new opportunities for audience interaction and income generation. Sports managers must understand the fundamentals and components of sports marketing to effectively position their organisations in the sports market (Liu et al., 2022). This information is crucial for successfully establishing each company's position in the competitive sports market. In a time when consumer preferences and technology breakthroughs are constantly changing the sports scene, sports managers need to deeply understand sports marketing principles to navigate and seize new opportunities effectively.

To assess the progress, patterns, and significance of scientific activities, "bibliometric analysis" refers to the quantitative and qualitative examination of scientific publications, literature, and related research in this domain. To evaluate a subject's progress, trends, and importance, bibliometric analysis requires quantitative and qualitative analysis of scientific publications and related research (Leonavičiūtė, 2023). It is a method used in scientific disciplines to categorise and evaluate bibliographic material, including publications, citations, authors, and institutions (Trofimova, 2023). To assess the impact and influence of publications, this research was carried out by downloading bibliographic data from electronic

databases and extracting various indicators, such as h-index (Lazarides et al., 2023). Finding important publications, authors, and organisations on a particular subject is becoming increasingly common in the medical literature (Shcherbachenko & Kotenko, 2023). Analysis can also be improved by using special tools to create scientific maps (Saputro et al., 2023). Bibliometric analysis offers a perception of a topic's study patterns, conceptual relationships, and sophistication, thereby directing future research paths.

This study thoroughly examines the development of sports promotion research in a decade using bibliometric approaches. Through a review of the academic literature, this study seeks to identify and clarify new directions in research, popular topics of interest, co-authored works, and the significant contributions made by scientific publications to our understanding and improvement of sports marketing strategies. It aims to provide a comprehensive view of how sports promotion has changed by carefully examining the scientific literature and identifying important themes and trends that have influenced the discourse. It will also shed light on author collaborations that have been essential in promoting innovation and knowledge dissemination in the field of sports promotion, as well as the collaborative networks within the academic community.

RESEARCH METHOD

This research uses a bibliometric method to examine how sports promotion research has developed over the last ten years. It identifies research trends, main focuses, author partnerships, and contributions of scientific works to understanding and improving sports promotion techniques by reviewing scientific literature.

The bibliometric approach can significantly examine the growth of sports promotion research. The influence and importance of scientific work generated over a given period can be evaluated using this approach, which focuses on writing, researcher collaboration, and the dissemination of literature in sports promotion. This bibliometric technique offers a comprehensive picture of the evolution of research on this topic by determining the most significant works and providing information on the quantity and distribution of citations. Bibliometric analysis also enables us to spot knowledge gaps that may serve as the foundation for future study, research trends and topic diversity. It is expected to significantly advance our knowledge of the development of concepts and practices related to sports promotion.

The first step in the research process is selecting a theme by thoroughly studying scientific databases, especially Scopus. Due to

its high level of accuracy and its relationship to scientific literature in various disciplines, including sports promotion, Scopus is chosen as the main database. Because of its extensive indexing and citation tracking features, Scopus is a priceless tool for finding pertinent research, monitoring academic trends, and assessing the influence of works in sports marketing. This research aims to capture the breadth and depth of current knowledge on the topic. It lays a solid basis for the succeeding phases of the research journey by using Scopus to ensure a systematic and thorough approach to theme selection. Due to its broad coverage and reliable data, bibliometric researchers typically choose Scopus as their primary database (Medias et al., 2023; Velasco-López et al., 2023; Vengadesh et al., 2023; Yazdani et al., 2022).

The data was collected from sources published in 2014–2023 to ensure coverage of the previous ten years. It is expected to thoroughly comprehend the dynamic advancements in the sports promotion. The primary variables that enhance the knowledge framework in this subject are modifications in consumer behaviour, changes in marketing emphasis, and the incorporation of information technology. This research can capture the most recent trends and noteworthy breakthroughs that have occurred or accumulated during that period by restricting data gathering to 2023. A thorough picture of the scientific contributions and research dynamics influencing and guiding the development of sports promotion concepts and activities is given by the data continuity from 2014 to 2023. A total of 1,853 documents were collected after a data search using a boolean keyword search string, as in Table 1. Considering the large number of documents, we filtered them under several criteria, as in Table 1.

Most articles considered should discuss sports marketing strategies, social media presence, and sponsorships that impact all areas of sports. Researchers widely use bibliometric methods to identify and analyse the co-occurrence of frequently used keywords in different fields of study (Tomaszewski, 2023), as well as understand the latest research trends (Uslu & Acikel, 2023). VOSviwer can depict relationships between concepts, authors, and organisations and offers various visualisations, such as density and overlay visualisation (Suryantoro et al., 2023), to help researchers build research network maps.

This bibliometric research is so important that we can understand more deeply the research and publication trends on sports promotion in scientific literature. More than that, this bibliometric research can help readers understand the important role and relevance of sports promotion in the world of sports through

Table 1 Keyword search Boolean operators

Citeria		Operator Boolean	Result Document
Search within	TITLE-ABS-KEY	(sport*" AND "promotion" OR "advertisement" OR "publicity" OR "public-relation*" OR "advertising" OR "puffery" OR "hype")	9.934
Publication years	2014-2023		6.002
Open access	All		3.008
Publication stage	Final		2.967
Document type	Article		2.368
Language	English		2.166
Source type	Journal		2.165
Subject Area			1.853

Source: Researchers' data from Scopus database, 2023

the research network map presented in this research.

RESULTS AND DISCUSSION

Over the past ten years, we shall examine trends in scientific publications about the number of works generated on sports promotion. We also offer a thorough examination of the historical development of the publication landscape. Through this examination, readers can have a comprehensive understanding of the expansion and changes in research focus, methodological advancements, and other elements impacting the publication flow during the past ten years.

Table 2 explains the distribution of the number of documents that have been published related to the topic of sports promotion in the last ten years, starting from 2014 to 2023. This data shows variations in research results, number of documents, and duplicate data. The number of documents has continued to increase over the years, reaching a peak of 271 publications in 2022. Thus, the data comprises 1.850 articles as three of them are duplicates.

We examine research findings about particular subject areas in this subchapter. A thorough examination determines how contemporary advancements and scientific contributions fit into different sports promotion disciplines. Readers are given a thorough understanding of the trends, obstacles, and innovations emerging in the field of sports promotion by examining the findings in the context of the subject. Through this presentation, we can assess the significance and influence of research on the advancement of knowledge in each field of study. An overview of the distribution of publications in various scientific disciplines in a certain period is presented

Table 2 Publication Trends

Year	Document	Duplicate Data
2023	233	1
2022	271	0
2021	266	0
2020	239	0
2019	179	0
2018	146	0
2017	136	1
2016	139	1
2015	130	0
2014	111	0

Source: Scopus exported refine value, 2023

Table 3 Subject area

Subject Area	Document
Medicine	1389
Social Sciences	439
Health Professions	433
Environmental Science	266
Business, Management and Accounting	160
Nursing	101
Psychology	82
Arts and Humanities	73
Biochemistry, Genetics and Molecular Biology	48
Engineering	36

Soucer: Scopus exported refine value, 2023

in Table 3. With the most publications, 1.389 documents, the "Medicine" sector takes the lead and suggests that research and progress in the medical field are top priorities. Considerable attention is also paid to the social sciences and health professions in 439 documents, indicating a diversification of research beyond the medical context. A thorough summary of the distribution of publications over the required period across different scientific areas can be found in Table 3. This prominence highlights the medical field's role as a centre of intellectual activity and emphasises the importance of research and achievements. As a result of the interconnectedness of sports across multiple fields of knowledge, this tendency points to a more comprehensive and interdisciplinary approach to sports promotion, where insights from other scientific disciplines contribute to a more holistic understanding of the subject.

In this subsection, we examine the reliability and sustainability of scientific sources utilised in research. The primary emphasis lies on the assessment of the calibre and applicability of diverse sources, such as scholarly journals, reference books, and other publications. Readers are guided in understanding the significance of choosing and utilising trustworthy reference resources in the context of scientific study through a thorough examination of each source's credibility. Therefore, this subchapter aims to give readers an understanding of how certain scientific sources can affect the reliability and validity of research.

An examination of publications based on important sources or journals in the relevant research domain is presented in Table 4. With 198 publications, the International Journal

Table 4 Scientific sources

Source	
International Journal of Environmental Research and Public Health	198
BMC Public Health	122
Journal of Physical Activity and Health	72
Journal of Physical Education and Sport	47
BMJ Open	44
Sustainability Switzerland	32
Frontiers in Public Health	31
Revista Brasileira de Medicina do Esporte	30
Health Promotion International	29
International Journal of Behavioral Nutrition and Physical Activity	27

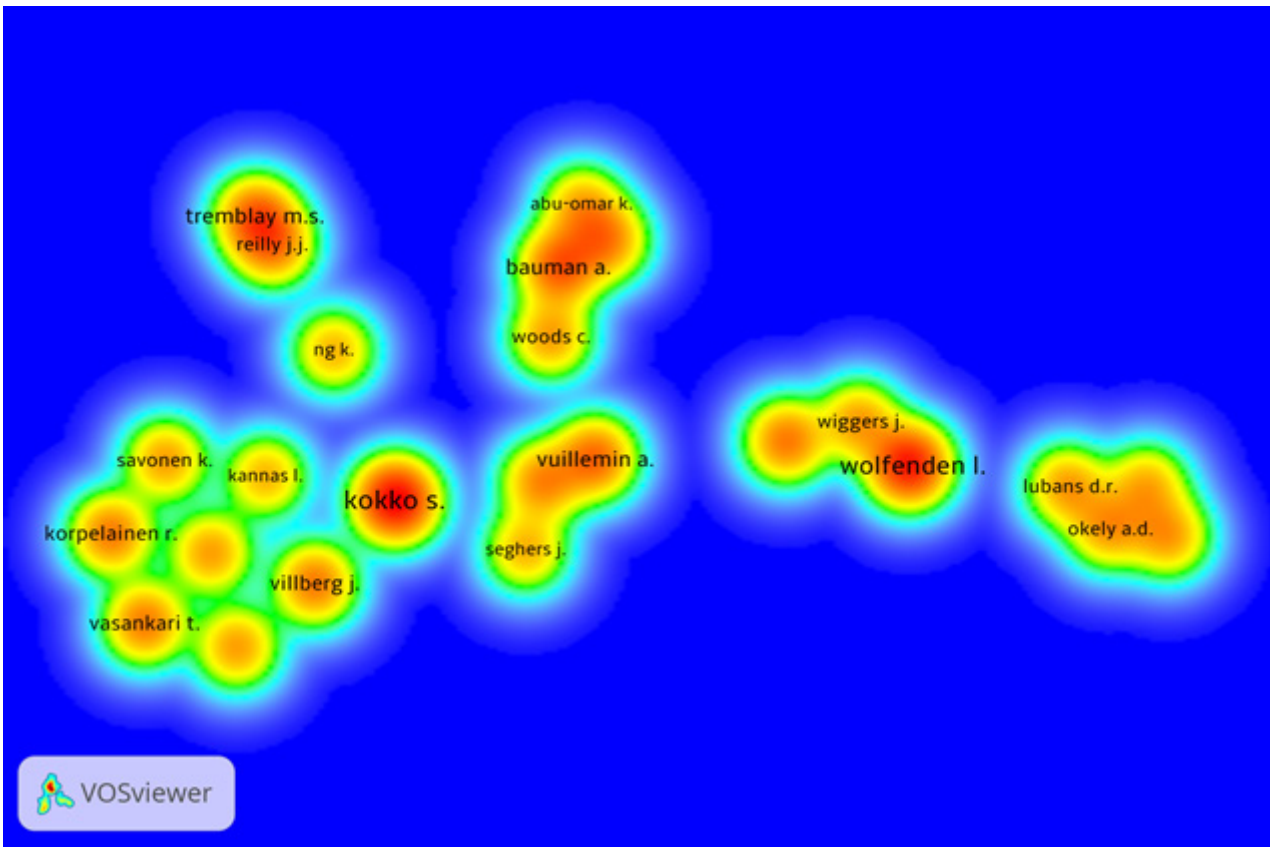
Source: Researchers' data, 2023

of Environmental shows its dominance and commitment to environmental and public health issues. Publication contributions on health promotion come from the journal Health Promotion International, which has 29 documents.

We delve deeply into authors' function, dynamics, and impact in the academic realm in the "Authors" sub-chapter. Aspects that affect research outcomes are evaluated, including collaboration patterns among authors, shifting institutional affiliation trends, and experience level. It is crucial to comprehend how author collaboration might result in diverse viewpoints and methods in a scientific study. Furthermore, we look at how an author's institutional affiliation university, research centre, or industry can be a significant factor in assessing the validity and significance of a work.

Information about several researchers and their publications in a field is presented in Figure 1. Following are the details of the data analysis from 7728 authors and 45 thresholds from a total of at least seven documents. The bolder, thicker, bigger name and the dots closer to a solid orange colour indicate that the author has the most documents. It is important to remember that the figure emphasises the writers' prominence through visual signals. If an author's name is bolder, thicker, and larger, they have submitted the most documents. Furthermore, the dots closer to a solid orange colour in the dataset represent more publications or greater influence. Figure 1 visual cues function as a navigational aid.

The most active contributor is Thomas S.L., who has an impressive record of eighteen documents. This noteworthy and dependable outcome highlights his enormous influence in the discipline. Information reveals that academics in this discipline usually publish between nine and ten papers annually. This data offers insightful context regarding publication patterns and productivity levels in the academic community under review. Out of all the researchers, Kokko S. had the strongest overall connection strength (58). This score indicates broad influence and interest in sports marketing and promotion.



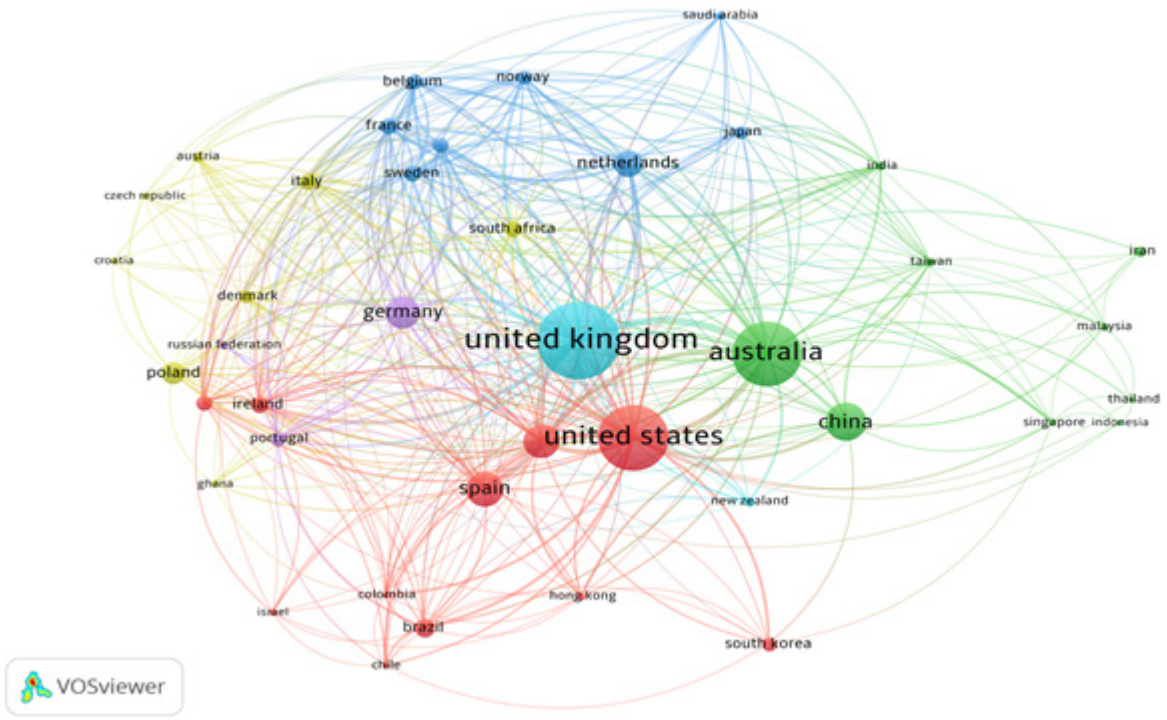
Source: VOSviewer, 2023

Figure 1 Density visualisation auhtors

Together, these results add to a more complex picture of the output, publication trends, and general influence of researchers in the academic community. Diverse roles and contributions of individual scholars in developing the body of knowledge in sports promotion are revealed by differences in publication records and the strength of links.

This subsection presented in Figure 2 examines the contributions and roles made by different nations in the context of sports promotion research. The analysis centres on the degree to which specific nations engage in knowledge production, independently and through international cooperation. Readers will be better able to comprehend the global distribution of knowledge on this topic by learning about the research contributions made by other countries. This chapter also covers the influence of elements like international cooperation, government policy, and investments in R&D on how nations participate in scientific research. We can recognise patterns, disparities, and opportunities for international cooperation that impact global research dynamics because of this experience.

One hundred fifteen countries are represented in the global involvement in



Source: VOSviewer, 2023

Figure 2 Country

publications on sports promotion. Remarkably, forty-one nations have contributed at least ten documents, indicating substantial involvement. This extensive and varied engagement highlights a general interest in and active participation in the topic of study across several locations and countries. The 41 countries' combined contribution represents a diverse and rich global viewpoint, emphasising the theme's significance and relevance worldwide.

The United States and the United Kingdom have a significant contribution to the theme's research. The study conlcludes that, with 359 submissions, the United Kingdom has become the leading source. The United States comes in second with 291 documents. These numbers highlight the significant amount of research produced by both nations and their critical roles in forming and influencing the discourse in the subject area. The large number of documents indicates the depth and scope of study that academics and institutions in these countries have done, establishing their standing in the international academic scene about sports promotion.

An understanding of the influence of research outputs from the US and the UK can be gained by looking at the citation counts. Interestingly, the UK has received an astounding 7,110 citations in total, compared to 5,272 citations from the US. These numbers provide striking evidence of the significant

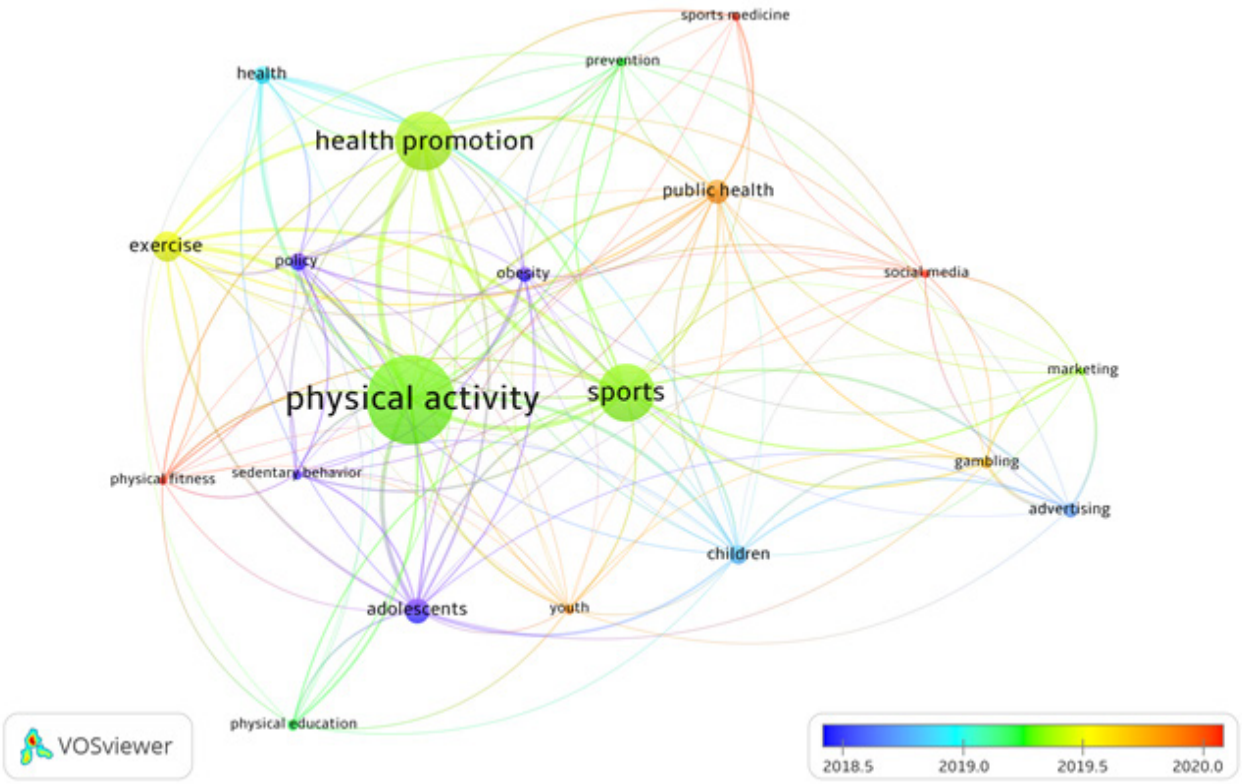
impact of research from both nations on the academic community. High citation counts indicate that the academic work produced by US and UK researchers has been extensively recognised, cited, and incorporated into the current discussion surrounding the topic, making a substantial contribution to the global advancement of knowledge.

The United Kingdom has the highest total link strength (357 citations). Further, with 306 citations, the United States follows. The overall connection strength illustrates how far the US and UK research outputs are integrated and cited in many scientific fields, highlighting their interrelated contributions and wide-ranging influence on the larger scientific community.

Following UK and US, Switzerland stands out with a remarkably high citation-to-paper ratio of 1410/47. This ratio, even with fewer articles, indicates a significant impact. The high citation-to-paper ratio for Switzerland highlights Swiss research's outstanding calibre and impact on the topic at hand. This suggests that every Swiss article has received a great number of citations. Despite a comparatively smaller number of publications, the high ratio indicates that Swiss research has had a long and influential impact, which demonstrates the high impact of their scholarly contributions.

This sub-chapter analyses and investigates several terms that characterise and describe important problems in scientific studies about particular themes. Understanding the evolution of significant concepts, characterising trends, and determining the focus of the study are all made possible largely by the careful selection and application of keywords in scientific literature. Readers will gain an understanding of commonly used vocabulary and recurrent keyword patterns and how the use of these terms reflects changes and advancements in scientific study on the related issues. In-depth knowledge of conceptual and linguistic understanding in scientific literature is the goal of this subchapter, which should help readers better comprehend the research framework and the trajectory of the issue under investigation.

The information in Figure 3 explains the overall link strength and frequency of keywords the author regularly uses. 20 keywords are found out of 4,340, each with at least 30 appearances in the abstract or keyword area. Interestingly, with 337 appearances, the keyword "physical activity" is the most used, suggesting that this idea is heavily stressed in the literature. A focus on promoting and advancing health-related projects is shown in the prominence of "health promotion," which appears 224 times in the research. Furthermore, the overall link strength (30) related to "social media" emphasises its remarkable importance in the literature (34). Furthermore, a sports promotion keyword



Source: VOSviewer, 2023

Figure 3 Authors keywords'

overlay is displayed, providing a thorough understanding of this field's linked ideas and themes. This analysis contributes to a more nuanced exploration of the author's focus and research environment by exploring the wider network of ideas and topics linked with the major keywords and providing a quantitative understanding of keyword frequency.

Analysis of publication trends shows a steady increase in the number of documents year on year over the last ten years. The trend of increasing publications reflects the dynamic nature of scientific development by demonstrating the growth and expansion of research in many domains (Baskaran, 2022; Bornmann & Haunschild, 2022; Kathiria & Arolkar, 2022; Liang et al., 2023; Rousseau & Binfet, 2023). This publication trend can guarantee the accuracy of future research data, including assessment and improvement of quality control over a certain period.

The analysis of publication distribution highlights the dominance of the health sector despite efforts to diversify into social sciences, health professions, and environmental elements. Each field contributes significantly to developing a comprehensive and multidisciplinary understanding of various research issues,

although some fields make smaller contributions than others. This finding provides important information for researchers and stakeholders who want to encourage scientific progress in sports promotion. The importance of sports marketing (Mazzei et al., 2013), social media function for players or teams (Taniyev et al., 2018), encouragement of physical exercise as a means of health promotion (Matolić et al., 2023), and sports branding (Stadnyk et al., 2023), all of which can be seen in this research.

Publications about sports have experienced a significant increase in the International Journal of Environmental Research and Public Health (IJERPH) (Nikolaidis & Knechtle, 2022). Important ideas and themes in health promotion through technological advances in the field of sport have been identified through bibliometric analysis of journals in the Web of Science (WoS) database (Belfiore et al., 2019). These results provide in-depth information about important journals and disciplines in the domain. These sources allow researchers and practitioners to obtain up-to-date and in-depth literature on related subjects.

This study provides an overview of the influence and contributions of researchers to a field through their publications and data. Collaboration participation and total linkage strength can reveal how closely a researcher's work is related to other scientific publications. The relationship between micro impacts and societal change is examined, focusing on the importance of including micro impacts in evaluation studies to identify more significant macro changes (Budtz Pedersen & Hvidtfeldt, 2023). Additionally, it is recommended to adopt a modified version of contribution analysis to measure research impact, which has proven to be a valuable framework for evaluating research programmes and providing practical feedback (Nguyen & Matsuura, 2016). It also looks at how researchers' career paths relate to the impact of their work, emphasizing the value of social networks and ties with renowned researchers (Zuo & Zhao, 2021). This analysis can serve as a foundation for a deeper understanding of the researcher's impact and contribution within relevant research parameters.

This analysis highlights the importance and impact of research conducted in various countries. At the same time, some countries have a high number of publications, citation ratios, overall strength of connections, and contributions to international research networks, all of which significantly impact research. This information can help understand each country's contribution to the body of knowledge and scientific publications on relevant topics.

Understanding the most popular terms in the scientific literature with an emphasis on exercise, physical activity, and health promotion

including social media is made possible by this research. Innovative sponsorship structures, social media campaigns and digital marketing initiatives complement, if not completely replace, traditional strategies (Abrahamyan, 2023; Zheng & Mason, 2022). The cross-media landscape has grown more complex due to the introduction of new media technologies, and the professional sports sector has had to adapt to these changes (Mainka et al., 2023). The sports services business has developed to a high standard largely thanks to digital technology, which has optimised its structure, integrated formats and increased efficiency (Liu et al., 2022). The distinction between on-field activity and spectator engagement is becoming increasingly blurred with the introduction of virtual and augmented reality in sports marketing.

CONCLUSION

Based on the data presented, research on exercise and health promotion in the last ten years has consistently increased in the number of publications, most of which focus on physical activity, health promotion, and environmental influences on health. The bibliometric analysis of the research shows that several publications, including "International Journal of Environmental Research and Public Health" and "BMC Public Health," stand out for their significant contributions to knowledge in this area. Furthermore, this research emphasises the dominance of several countries, especially the United Kingdom and the United States, which have the largest publishing contributions and great influence on international research networks. Keywords, such as "physical activity," "health promotion," and "exercise" are widely used in research settings, thus indicating that this research is primarily concerned with prevention initiatives, health promotion, and the benefits of physical activity in society.

The results of this research can also be used as a reference for stakeholders working in sports promotion, especially in promoting the importance of health and sports for survival. Furthermore, the findings of this research can also be used as a basis for further research for interdisciplinary researchers, as well as promoting international collaborative research by taking into account the dynamic changes and developments of the times. Additionally, it is recommended to adopt a modified version of contribution analysis to measure research impact, which has proven to be a valuable framework for evaluating research programmes and providing practical feedback.

This research only analses data limited according to the predetermined inclusion criteria. In addition, the use of boolean string

keyword searches may need to be more comprehensive, which may result in documents from other sources unable to be retrieved and analysed. Hence, to provide a more comprehensive and contemporary view, further research may consider various other data sources with different inclusion criteria, such as a larger database, namely Google Scholar, or a data source equivalent to Scopus, Web of Science, per se. It is important to conduct further studies on research quality, which should include a review of methodology, research design, and practical implications of the findings. International collaboration between researchers can also facilitate a deeper understanding of regional differences in sports promotion activities, especially in health and physical activity and sports. In addition, combining bibliometric methods with other types of research, such as qualitative research, systematic literature reviews, meta-analysis, and scoping areas, can provide a richer understanding of the context and practical implications of research findings.

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REFERENCES

Abrahamyan, L. S. (2023). Key drivers of the evolution of the sports management model demonstrated by an example of Armenia and EU Countries. *Retos*, *49*, 739–746. https://doi.org/10.47197/retos.v49.98520

Antanas, U., & Sidlauske, A. (2022). The influence of digital marketing on the communication of football clubs. *HUMANITIES STUDIES*, *90*(13), 54–58. https://doi.org/10.26661/hst-2022-13-90-06

Bahir, H., Abed, S. A., & Ziarmal, M. R. (2023). Application and prospect of new media in sports news dissemination. *Scientific Journal of Sport and Performance*, *2*(3), 423–427. https://doi.org/10.55860/YIQV1201

Baskaran, S. (2022). Publications trends in big data: A scientometric analysis. *IP Indian Journal of Library Science and Information Technology*, *6*(2), 102–107. https://doi.org/10.18231/j.ijlsit.2021.021

Belfiore, P., Ascione, A., & Di Palma, D. (2019). Technology and sport for health promotion: A bibliometric analysis. *Journal of Human Sport and Exercise*, *15*(4). https://doi.org/10.14198/jhse.2020.154.19

Bertling, C. (2021). Media strategies in

the sports media sector. In *Managing Sports Teams* (pp. 323–340). https://doi.org/10.1007/978-3-030-56495-7_16

Bornmann, L., & Haunschild, R. (2022). Empirical analysis of recent temporal dynamics of research fields: Annual publications in chemistry and related areas as an example. *Journal of Informetrics*, *16*(2), 101253. https://doi.org/10.1016/j.joi.2022.101253

Budtz Pedersen, D., & Hvidtfeldt, R. (2023). The missing links of research impact. *Research Evaluation*. https://doi.org/10.1093/reseval/rvad011

Budzinski, O. (2019). Market-internal financial regulation in sports as an anticompetitive institution. *SSRN Electronic Journal*, *110*. https://doi.org/10.2139/ssrn.3439332

Chen, B. (2023). Research on the application of marketing strategy of national fitness exercise and dance events in the construction of sports culture based on big data technology. *Applied Mathematics and Nonlinear Sciences*. https://doi.org/10.2478/amns.2023.1.00077

Cornwell, T. B. (2022). Sport, marketing, and consumer culture. In *The Oxford Handbook of Sport and Society* (pp. 336–356). Oxford University Press. https://doi.org/10.1093/oxfordhb/9780197519011.013.19

Crabtree, R. M., & Zhang, J. J. (2022). Challenges and opportunities of contemporary sport marketing. In *Sport Marketing in a Global Environment* (pp. 1–13). Routledge. https://doi.org/10.4324/9781003270041-1

Damayanti, T., Dida, S., Hidayat, D. R., & Cho, S. K. (2022). Nation brand image and trust level of foreign citizens. *PRofesi Humas Jurnal Ilmiah Ilmu Hubungan Masyarakat*, *7*(1), 1. https://doi.org/10.24198/prh.v7i1.38540

Dorgan, V. (2023). Assessment and planning – essential components of the strategic model of motor recovery of preschoolers with icp. *SPORT AND SOCIETY*, 1–5. https://doi.org/10.36836/2023/1/01

Dottori, M., Sévigny, A., & O'Reilly, N. (2022). Accelerating direct virtual public relations for sport organizations through information subsidies during COVID-19. In *Research Handbook on Sport and COVID-19* (pp. 138–152). Edward Elgar Publishing. https://doi.org/10.4337/9781802207576.00019

Fortunato, J. A. (2018). Sports leagues' game exposure policies: Economic and legal complexities. *Journal of Global Sport Management*, *3*(1), 1–17. https://doi.org/10.1080/24704067.2017.1411164

Fujak, H., Karg, A., & Whitburn, D. (2022). Sport media has an audience measurement problem. *European Sport Management Quarterly*, 1–21. https://doi.org/10.1080/16184742.2022.2153376

Gulmatova, E. N. (2022). The impact of sport and sporting events on society, economy and international cooperation of countries. *Voprosy Kul'turologii (Issues of Cultural Studies)*, *4*, 309–312. https://doi.org/10.33920/nik-01-2204-03

Hafiar, H., Budiana, H. R., Abdullah, K. H., Sofyan, D., & Amin, K. (2024). Scoring big: A bibliometric analysis of the intersection between sports and public relations. *Cogent Social Sciences*, *10*(1). https://doi.org/10.1080/23311886.2023.2297706

Kathiria, P., & Arolkar, H. (2022). Trend analysis and forecasting of publication activities by Indian computer science researchers during the period of 2010–23. *Expert Systems*, *39*(10). https://doi.org/10.1111/exsy.13070

Kautz, F. (2018). Sport public relations. In *Sport-PR 2.0* (pp. 141–158). Springer

Fachmedien Wiesbaden. https://doi.org/10.1007/978-3-658-22249-9_6

Kim, B., & Fusion, C. (2020). Martial arts events. *Journal of the Korea Society of Computer and Information*, *25*(12), 271–278.

Kravchenko, T. P., & Pogrebnyi, V. V. (2023). Organization of sports marketing in modern conditions. *Scientific Journal of National Pedagogical Dragomanov University. Series 15. Scientific and Pedagogical Problems of Physical Culture (Physical Culture and Sports)*, *5(165)*, 66–71. https://doi.org/10.31392/NPU-nc.series15.2023.5K(165).14

Kumari, H. (2019). Role of media in sports development. *International Journal of Physical Education, Sports and Health*, *6*(1), 97–99.

Lazarides, M. K., Lazaridou, I.-Z., & Papanas, N. (2023). Bibliometric analysis: Bridging informatics with science. *The International Journal of Lower Extremity Wounds*, 153473462311535. https://doi.org/10.1177/15347346231153538

Lee, K., Na, C. W., & Lee, J. S. (2022). Impacts of consumer participation levels into sport team's eco-friendly marketing activities on public relations, team image, and behavioral intention: Focusing on baby boomer generation. *Korean Journal of Sport Management*, *27*(5), 38–58. https://doi.org/10.31308/KSSM.27.5.38

Leonavičiūtė, V. (2023). *Bibliometric data analysis of scientific publications in the field of change management*. https://doi.org/10.3846/bm.2023.987

Li, M., Shi, Y., & Peng, B. (2022). The analysis and research on the influence of sports industry development on economic development. *Journal of Environmental and Public Health*, *2022*. https://doi.org/10.1155/2022/3329174

Liang, Y.-E., Ho, S. Y.-C., Chien, T.-W., & Chou, W. (2023). Analyzing the number of articles with network meta-analyses using chord diagrams and temporal heatmaps over the past 10 years: Bibliometric analysis. *Medicine*, *102*(25), e34063. https://doi.org/10.1097/MD.0000000000034063

Liu, Q., Liu, Y., & Liu, S. (2022). Application scenarios and promotion strategies of high-quality development of sports service industry empowered by digital technology. *Mathematical Problems in Engineering*, *2022*, 1–11. https://doi.org/10.1155/2022/1416948

Macdonald, R. D. (2000). When worlds collide: the interface between sport marketing and industrial relations. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.3080043

Mainka, M. K., Melnichenko, O., Tsybrovskyi, A., Sidielnikov, D., Nitsenko, V., & Zakharin, S. (2023). Strategies of socially responsible marketing of companies in the sphere of sports. *Financial and Credit Activity Problems of Theory and Practice*, *2*(49), 435–444. https://doi.org/10.55643/fcaptp.2.49.2023.3988

Matolić, T., Jurakić, D., Podnar, H., Radman, I., & Pedišić, Ž. (2023). Promotion of health-enhancing physical activity in the sport sector: a study among representatives of 536 sports organisations from 36 European countries. *BMC Public Health*, *23*(1), 750. https://doi.org/10.1186/s12889-023-15589-9

Mazzei, L., De Oliveira, N. S., Rocco Jr., A. J., & Bastos, F. D. C. (2013). Uma análise da produção acadêmica brasileira em marketing esportivo enquanto área

multidisciplinar. *Revista Brasileira de Marketing*, *12*(4), 183–200. https://doi.org/10.5585/remark.v12i4.2625

Medias, F., Rosari, R., Susamto, A. A., & Ab Rahman, A. B. (2023). A bibliometric analysis on innovation in philanthropy research: A study based on Scopus database. *International Journal of Innovation Science*. https://doi.org/10.1108/IJIS-08-2022-0139

Minchenko, M., Boyko, A., Dotsenko, A., & Minchenko, M. (2022). Development of the sports industry: marketing aspects. *Vìsnik Sums'kogo Deržavnogo Unìversitetu*, *2022*(4), 329–336. https://doi.org/10.21272/1817-9215.2022.4-36

Nguyen, P. H., & Matsuura, Y. (2016). Modeling and analyzing academic researcher behavior. *The Asian Journal of Technology Management (AJTM)*, *9*(2), 80–87. https://doi.org/10.12695/ajtm.2016.9.2.2

Nikolaidis, P. T., & Knechtle, B. (2022). Sports and health, second edition. *International Journal of Environmental Research and Public Health*, *19*(14), 8435. https://doi.org/10.3390/ijerph19148435

Pagels, J. (2018). Competition between sports hurts TV ratings: How to shift league calendars to optimize viewership. *Journal of Sports Analytics*, *4*(3), 193–199. https://doi.org/10.3233/JSA-170117

Päkk, R., & Karjaluoto, H. (2022). Leveraging sport sponsorship with digital marketing communication. In *Social Media for Progressive Public Relations* (111–123). Routledge. https://doi.org/10.4324/9781003177791-11

Qian, Y., Sui, Z., & Wang, D. (2023). The implementation of digital marketing in brand promotion. *Journal of Education, Humanities and Social Sciences*, *16*, 135–140. https://doi.org/10.54097/ehss.v16i.9583

Rai, J. S., Cho, H., Yousaf, A., & Itani, M. N. (2024). The influence of event-related factors on sport fans' purchase intention: a study of sponsored products during televised sporting events. *Asia Pacific Journal of Marketing and Logistics*, *36*(1), 85–105. https://doi.org/10.1108/APJML-11-2022-0959

Recio Moreno, D., Gil Quintana, J., & Romero Riaño, E. (2023). Impact and engagement of sport & fitness influencers: A challenge for health education media literacy. *Online Journal of Communication and Media Technologies*, *13*(3), e202334. https://doi.org/10.30935/ojcmt/13309

Rousseau, C. X., & Binfet, J.-T. (2023). Publications trends in society & animals from 2009–2019: A bibliometric analysis. *Society & Animals*, 1–24. https://doi.org/10.1163/15685306-bja10136

Saputro, D. R. S., Prasetyo, H., Wibowo, A., Khairina, F., Sidiq, K., & Wibowo, G. N. A. (2023). Bibliometric analysis of neural basis expansion analysis for interpretable time series (n-beats) for research trend mapping. *BAREKENG: Jurnal Ilmu Matematika Dan Terapan*, *17*(2), 1103–1112. https://doi.org/10.30598/barekengvol17iss2pp1103-1112

Savić, Z., Ranđelović, N., Stojanović, N., Stanković, V., & Šiljak, V. (2018). The sports industry and achieving top sports results. *Facta Universitatis, Series: Physical Education and Sport*, *15*(3), 513. https://doi.org/10.22190/FUPES1703513S

Shcherbachenko, V., & Kotenko, S. (2023). Bibliometric analysis of scientific publications in the field of online education. *Mechanism of an Economic Regulation*,

2(100), 67–73. https://doi.org/10.32782/mer.2023.100.11

Singla, B. (2023). Promotional strategies for organized retail. *International Journal of Asian Business and Information Management*, *14*(1), 1–11. https://doi.org/10.4018/IJABIM.325229

Stadnyk, S., Okun, D., Bondar, A., & Sereda, N. (2023). Sports branding as an object of scientific analysis based on the study of publications in the international scientometric database Scopus. *Слобожанський Науково-Спортивний Вісник*, *27*(2), 81–91. https://doi.org/10.15391/snsv.2023-2.004

Sukamto, V. P., & Primadini, I. (2023). The rebranding strategy of Azarine Cosmetic. *PRofesi Humas Jurnal Ilmiah Ilmu Hubungan Masyarakat*, *8*(1), 102. https://doi.org/10.24198/prh.v8i1.45631

Suryantoro, E., Udin, U., & Qamari, I. N. (2023). A bibliometric analysis using VOSviewer: Leadership in infection prevention and control. *Multidisciplinary Science Journal*, *5*(2), 2023022. https://doi.org/10.31893/multiscience.2023022

Susilo, D., Putranto, T. D., & Santos, R. R. T. (2022). The strategy of digital marketing of Bening's Clinic through Instagram. *PRofesi Humas Jurnal Ilmiah Ilmu Hubungan Masyarakat*, *7*(1), 109. https://doi.org/10.24198/prh.v7i1.38428

Taniyev, O., Ishaq, F., & Gordon, B. (2018). Investigating the differences in twitter content and effectiveness between individual and team sport athletes. *International Journal of Business Administration*, *9*(4), 89. https://doi.org/10.5430/ijba.v9n4p89

Tomaszewski, R. (2023). Visibility, impact, and applications of bibliometric software tools through citation analysis. *Scientometrics*, *128*(7), 4007–4028. https://doi.org/10.1007/s11192-023-04725-2

Trofimova, I. N. (2023). Publication activities within the context of scientific policy goals: The bibliometric analysis. *Scientific and Technical Libraries*, *2*, 59–79. https://doi.org/10.33186/1027-3689-2023-2-59-79

Uslu, T. U., & Acikel, B. (2023). Bibliometric analysis of academic publications on artificial intelligence and aviation keywords with vosviewer. *Journal of Aviation*, *7*(2), 284–292. https://doi.org/10.30518/jav.1293740

Velasco-López, J.-E., Carrasco, R.-A., Cobo, M. J., & Fernández-Avilés, G. (2023). Data-driven scientific research based on public statistics: a bibliometric perspective. *El Profesional de La Información*. https://doi.org/10.3145/epi.2023.may.14

Vengadesh, S., Chinna, P. R., & Aravindaraj, K. (2023). A bibliometric analysis of research trends in goods transportation using the scopus database. *Business Perspectives and Research*, 227853372211488. https://doi.org/10.1177/22785337221148807

Veselinović, J., Perović, A., Šiljak, V., & Bačevac, S. (2022). Challenges of modern sport management. *Oditor*, *8*(1), 111–134. https://doi.org/10.5937/Oditor2201109V

Wahid, M., & Sultana, Z. (2023). Challenges of social and digital media engagement for established brands: A rise of crowd culture. *Journal of Business and Management Studies*, *5*(2), 38–46. https://doi.org/10.32996/jbms.2023.5.2.4

Wu, S.-Y., Chen, G.-R., & Tetin, I. (2022). An economic model for popular event promotions. *Bulletin of Applied Economics*, 169–173. https://doi.org/10.47260/bae/9210

Yanukov, S. G., & Bahturidze, Z. Z. (2022).

The impact of sport on the reputation of states in the modern political agenda. *Administrative Consulting*, *7*, 150–162. https://doi.org/10.22394/1726-1139-2022-7-150-162

Yazdani, W., Ansari, M. S., & Sami, L. (2022). A bibliometric analysis of mandatory corporate social responsibility using rstudio: Based on scopus database. *International Journal of Professional Business Review*, *7*(6), e0744. https://doi.org/10.26668/businessreview/2022.v7i6.744

Zheng, J., & Mason, D. S. (2022). New media, digitalization, and the evolution of the professional sport industry. *Frontiers in Sports and Active Living*, *4*. https://doi.org/10.3389/fspor.2022.921329

Zuo, Z., & Zhao, K. (2021). Understanding and predicting future research impact at different career stages—A social network perspective. *Journal of the Association for Information Science and Technology*, *72*(4), 454–472. https://doi.org/10.1002/asi.24415