

# Psychosocial and Economic Research Trends in Sport Sciences: A Bibliometric Analysis

Muhammet Talha HAN<sup>1</sup> 

## Abstract

The main purpose of this study is to examine the field of sports economics and psychosocial relations through bibliometric analysis and to reveal the thematic structure, keyword trends, and interdisciplinary connections within the field. A comprehensive bibliometric analysis was conducted using the Bibliometrix-R package and VOSviewer software to provide an integrated overview of research developments between 1990 and 2025. The results show that the number of publications increased steadily after 2010 and peaked in 2020, indicating growing academic interest in the holistic interaction between economic and psychosocial dimensions. Thematic and keyword analyses revealed that sports are not only associated with physical activity but also connected to economic impact, mental health, social cohesion, behavioral change, and sustainable development. Recently, emerging topics such as the metaverse, artificial intelligence, digital health, social media, and post-pandemic mental health have gained prominence, demonstrating how technological and societal transformations shape research directions. Consequently, further exploration of long-term mental health effects, the socio-economic sustainability of mega sporting events, the psychosocial contributions of digital platforms, and the role of artificial intelligence and the metaverse in the sports economy is recommended. This study offers a multidimensional and original contribution to understanding the evolving structure of the field.

## Keywords

Economy, psychosocial, sports psychology, sports economy

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## **Introduction**

**S**port has evolved from mere competition to a multidimensional domain shaping quality of life, social structures, and sizeable economic value. (Keane et al., 2019; Huang et al., 2022). Sports not only generate billions of dollars globally but also affect psychosocial processes such as mental health, social belonging, and societal integration (Zhou et al., 2022). Therefore, the economic and psychosocial dimensions of sports can no longer be considered independently, and interdisciplinary studies at their intersection have gained increasing importance. Accordingly, economic and psychosocial dimensions should be studied jointly to capture their intertwined mechanisms and outcomes.

Sport economics examines the financial structure, resource distribution, and economic impacts of sports activities, while psychosocial research focuses on the effects of sports on individuals' mental health, social relationships, and social cohesion. Despite a rise in academic publications aimed at understanding the multifaceted effects of sports on individuals and society in recent years (Eckermann et al., 2021; Gaskin et al., 2010; Huang et al., 2022; Yimer, 2025), there remains a noticeable gap in addressing these two dimensions through bibliometric analysis.

This study aims to fill this gap by simultaneously examining the fields of sport economics and psychosocial relationships, utilizing bibliometric analysis to contribute to the understanding of the complex nature of sports, revealing the thematic development, publication trends, and future research directions within the field. In doing so, this research seeks to provide a comprehensive and up-to-date perspective to both the academic community and stakeholders shaping sports policies.

In line with the research questions and the scope of the analysis, this study has sought to answer the following key questions:

- Uncovering long-term publication and citation dynamics in sport economics and psychosocial research (1990–2025);
- Delineating evolving thematic structures and emerging topics through advanced keyword and conceptual analyses;
- Elucidating the interconnections among abstracts, author keywords, and keyword-plus terms to reveal underlying conceptual frameworks;

- Mapping global collaboration patterns and co-authorship networks to demonstrate the international landscape of the field;
- Establishing a transparent, reproducible bibliometric framework supported by robust validation techniques, including age-normalized citations and threshold sensitivity analysis.

## Method

This study is based on the bibliometric analysis method. Bibliometric analysis is a quantitative method that involves measuring literature and time to comprehensively evaluate mathematics, statistics, and philology (Perianes-Rodriguez et al., 2016). It is a more reliable method than subjective or intuitive evaluation techniques. Nowadays, bibliometric methods are commonly combined with quantitative and statistical approaches to examine publication patterns, scientific progress, academic contributions, international collaboration, and citations within a specific research area (Thompson et al., 2015). This approach provides an overview of the global dynamics of science over the years (Al Jarroudi et al., 2025). In this context, the study aims to analyze the content frequency, distribution over the years, and conceptual density of publications covering sports, health, economics, and psychosocial themes between 1990 and 2025. In this study, bibliographic coupling and co-citation analyses were performed to identify structural relationships among publications, using appropriate threshold values to ensure the reliability of the results.

### *Research Design*

This study is based on a quantitative approach aimed at revealing the spread and conceptual relationships of selected key concepts in the literature. Through bibliometric analysis, data have been evaluated based on publication counts and term frequencies. This has contributed to presenting an overall view of the sports economics and psychosocial fields in the relevant literature and their changes over time.

### *Data Collection Process and Analysis*

In the data collection process, reliable and internationally recognized academic databases, such as the Web of Science (WoS) Core Collection, were used (Dertli

& Erden Dertli, 2025). Bibliometric analysis is a systematic and reliable quantitative method that reveals publication trends, conceptual relationships, and thematic developments in the literature. This method has been widely applied in sport research to examine various interdisciplinary domains, including business, environment, and sustainability (Alma, 2024).

The data were retrieved from the WoS Core Collection using the following search strategy:  $TS = (sport \text{ AND } (econom \text{ OR } \text{“sport economics”})) \text{ AND } (psychosocial \text{ OR } \text{“mental health”} \text{ OR } \text{“social cohesion”})^{**}$ . The search was limited to English-language journal articles indexed in SSCI, SCI-Expanded, ESCI, and A&HCI, and conducted in July 2025. The subject categories were restricted to *Sport Sciences*, *Economics*, *Psychology*, and *Social Sciences (Interdisciplinary)*. This structured filtering ensured that only relevant, high-quality, and interdisciplinary publications were included in the analysis.

The collected bibliometric data were analyzed using the VOSviewer program to perform the analysis of the co-author country network. Additionally, for the analysis of fundamental data such as annual scientific production values, average citation counts per year, three-field analysis, world map of country collaborations, thematic map, thematic evolution, word cloud, frequency of words over time, trending topics, conceptual structure map, and reference spectroscopy, the bibliometrix R software was used. Figure 1 presents the search strategies for sport, economics, and psychosocial relationships.

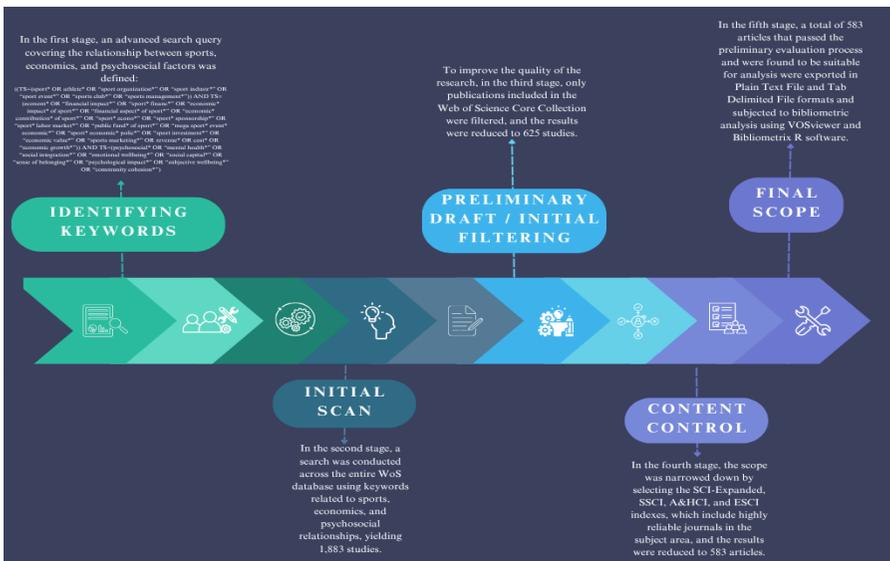


Fig 1. Search strategies

### *Limitations of the Study*

This study was conducted within certain historical, conceptual, and methodological limitations. First, the data obtained for the study was collected in July 2025. Therefore, studies published after this date or those that have not yet been fully indexed were not included in the analysis. Second, the bibliometric data were limited to publications indexed in the Web of Science (WoS) database, specifically those included in the SSCI (Social Sciences Citation Index), SCI-EXPANDED (Science Citation Index Expanded), ESCI (Emerging Sources Citation Index), and A&HCI (Arts & Humanities Citation Index). Thus, studies from databases outside WoS were not considered. This limitation means that the entire literature could not be accessed, restricting the generalizability of the findings. Third, the analysis was conducted based on selected keywords. While the keywords used included key concepts related to sports, economics, and psychosocial fields, they may not cover all the terms used in these fields. This could result in some studies in the literature being overlooked. Considering all these limitations, the findings of the study should be evaluated within the framework of a specific time frame, database, and analysis criteria.

### *Ethics Committee Approval*

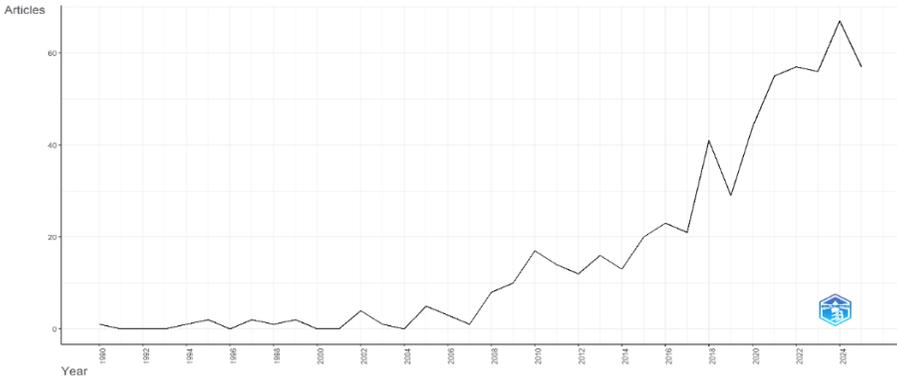
This research was conducted solely on the basis of secondary data (Web of Science database) and does not involve any experimental procedures or direct data collection from human or animal participants. Therefore, ethics committee approval is not required for this study. According to the Ethical Principles published by ULAKBİM TR Index in 2020, ethics committee approval is mandatory for studies that collect data from participants through methods such as surveys, interviews, focus groups, observations, experiments, and similar approaches, or for studies conducted on human or animal subjects. However, since this study is limited to the evaluation of secondary data within the scope of bibliometric analysis, it falls outside the scope of research requiring ethics committee approval.

## Findings

This section presents the findings obtained in the study. At this point, the findings related to the key information of the relationship between sports, economics, and psychosocial aspects are presented in Figure 2.

The dataset covering the years 1990–2025 comprises 583 documents published across 388 different sources. The average age of the documents is 6.2 years, with an annual growth rate of 12.25%. Each document has received an average of 28.89 citations, and a total of 2,449 authors have contributed to these publications. On average, there are 4.58 co-authors per document, with an international co-authorship rate of 24.7%. In addition, the analysis identified 1,482 Keyword Plus (ID) terms and 1,816 author keywords (DE), with the earliest publication dating back to 1990.

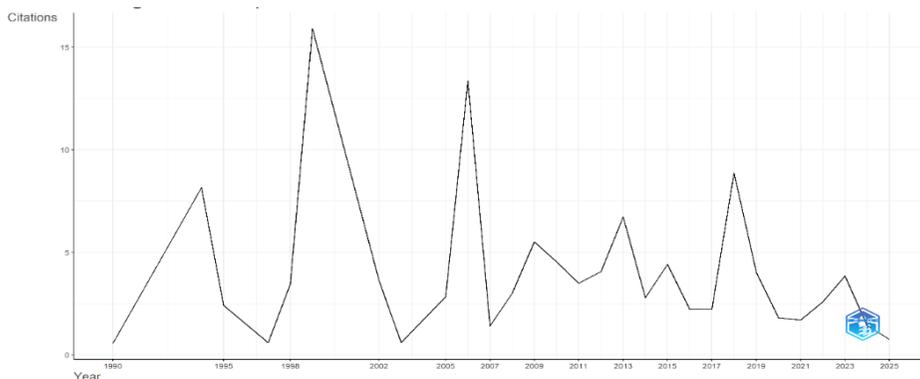
The findings related to the annual scientific production values of the relationship between sports, economics, and psychosocial aspects are presented in Figure 2.



**Fig 2.** Annual scientific production

As seen in Figure 2, the relationship between sports, economics, and psychosocial aspects has been examined from 1990 to 2025. In 1990, only one article was published, and in subsequent years, the production fluctuated, with some periods showing a decline or remaining at very low levels. However, from 2010 onwards, a clear upward trend emerged, with a particularly rapid increase in the number of articles after 2018. Between 2020 and 2025, the annual publication count ranged from 44 to 67, reaching its highest levels. These findings indicate a significant increase in academic interest and production in the field of sports economics and psychosocial relationships in recent years.

The findings related to the annual average citation counts for the relationship between sports, economics, and psychosocial aspects are presented in Figure 3.



**Fig 3.** Annual average citation counts

In Figure 3, although the number of publications addressing the relationship between sports, economics, and psychosocial aspects was low in the 1990s, some years saw high average citation counts. Notably, the years 1994, 1995, 1998, 1999, and 2006 recorded significant average citation values. The year 1999 stands out as the year with the highest average citation count, at 429.50. Despite the increase in publication numbers after 2010, the average citation counts generally remained at lower levels. The year 2018 partially reversed this trend, recording one of the highest averages in recent years with a citation count of 71.07. In the period after 2020, citation counts began to decline again, with especially limited average citations in 2024 and 2025. These findings suggest that earlier studies received higher citations due to their longer presence in the literature, while newer publications have not yet had sufficient time to accumulate citations.

The findings related to the three-field analysis of the relationship between sports, economics, and psychosocial aspects are presented in Figure 4.

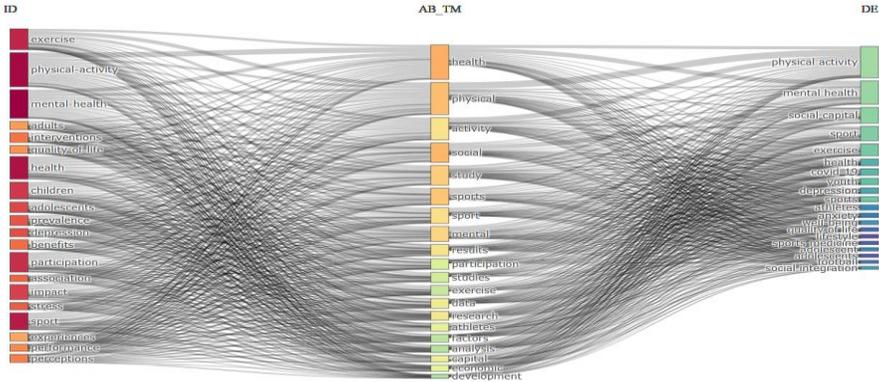


Fig 4. Three-Field analysis

In Figure 4, it has been found that the terms social capital, depression, youth, anxiety, well-being, social integration, physical activity, mental health, exercise, health, economic, development, and sport are interrelated.

The findings related to the countries of co-authors addressing the relationship between sports, economics, and psychosocial aspects are presented in Figure 5.

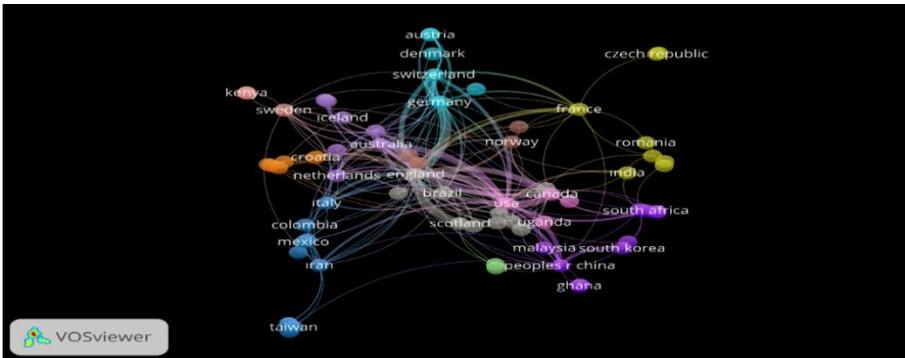
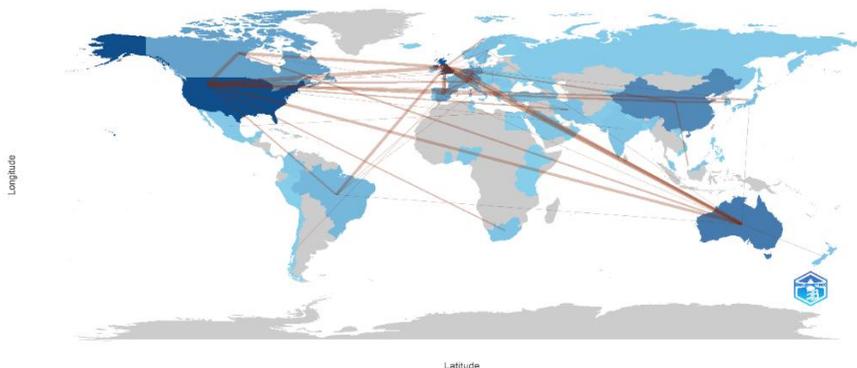


Fig 5. Co-Author country network

In Figure 5, it has been found that the co-author country network graph consists of 70 nodes, 11 clusters, 266 links, and a total link strength of 440. The country with the most publications is the United States, with 113 articles, followed by the United Kingdom with 96 articles and Australia with 71 articles. However, when examining citation counts, the United Kingdom leads with 6,029 citations, highlighting its significant contributions to the field. Despite China contributing 54 articles, it has only received 232 citations, indicating a relatively lower impact. Germany stands out with 46 articles and 1,607 citations.

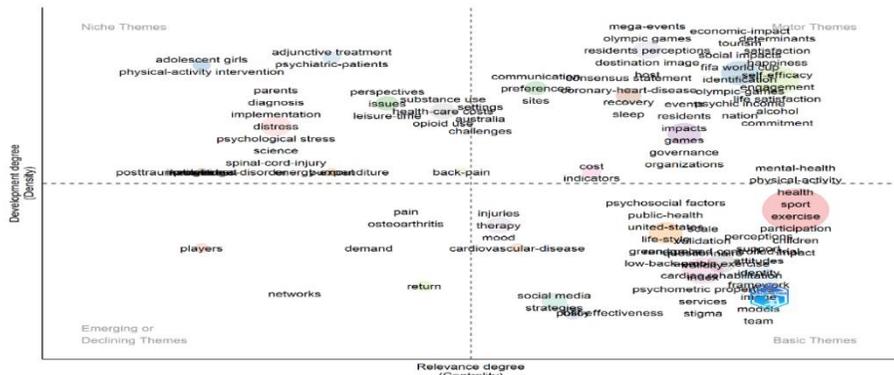
The world map of country collaborations in the relationship between sports, economics, and psychosocial aspects is presented in Figure 6.



**Fig 6.** World map of country collaborations

As shown in Figure 6, the strongest international collaborations in sport economics and psychosocial research are observed between the United Kingdom and Australia (13 joint publications), followed by Germany–Switzerland (11), United Kingdom–Germany (10), and United States–United Kingdom (10). Additional active partnerships include the United States–Canada and United Kingdom–Spain collaborations (9 each). Overall, the network demonstrates a strong concentration of research collaboration among European and Anglo-Saxon countries, highlighting their central role in shaping international scholarly connections within the field.

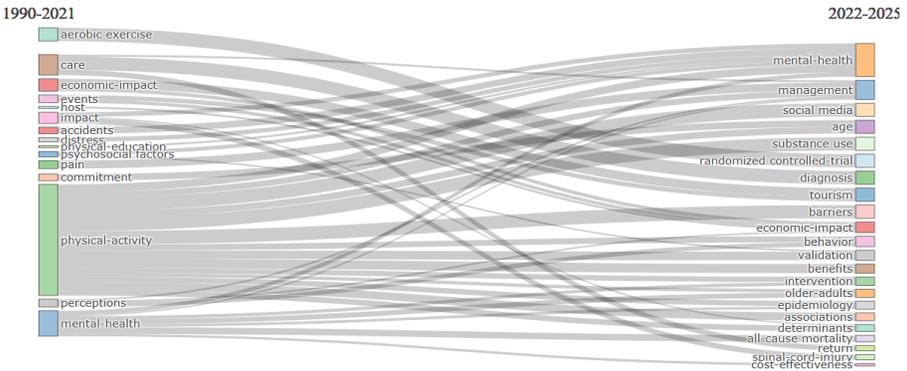
The thematic map of keyword plus terms in articles discussing the relationship between sports, economics, and psychosocial aspects is presented in Figure 7.



**Fig 7.** Thematic map of keyword plus

Thematic mapping (Figure 7) highlights mental health, physical activity, and exercise as high-centrality themes within sport-related research. A robust economic-impact cluster-including *tourism*, *FIFA World Cup*, and *Olympic Games*-appears adjacent to the core, while psychosocial and public-health terms (e.g., *lifestyle*, *psychosocial support*) indicate societal-level mechanisms through which sport contributes to community well-being.

The thematic evolution of Keyword Plus terms in articles discussing the relationship between sports, economics, and psychosocial aspects is presented in Figure 8.



**Fig 8.** Thematic evolution of keyword plus

The thematic evolution map between 1990-2021 and 2022-2025 in Figure 8 reveals a significant transformation in the fields of sport economics and psychosocial relationships. Research in sports and health has deepened from the theme of physical activity to more specific psychosocial subtopics such as mental health, behavior, interventions, older adults, and substance use during the 2022-2025 period. This development indicates that physical activity is not only related to physical health but is also closely linked to individuals' psychosocial well-being and behavioral health dimensions.

In terms of sport economics, the theme of economic impact has maintained its significance in both the 1990-2021 and 2022-2025 periods. Topics like tourism, sports management, and access barriers have gained prominence. The economic dimension of sports is viewed not only in terms of sectoral growth and investment but also as a strategic area contributing to sustainability and the overall welfare of society. The economic impact of events like the FIFA World Cup and mega sports events highlights the scale of sports economics and its broad-reaching effects on society.



social bonds. Research often focuses on psychosocial dynamics like participation and motivation to explain sports' effects on quality of life and social integration. These data reveal the dynamic and reciprocal relationship between the economic sustainability of sports and individuals' psychosocial well-being, highlighting sports as a critical tool for both public health and economic development.

Sport economics and psychosocial factors emerge as two complementary critical dimensions in the fields of sport and health. The economic effects of sports are not limited to sectoral growth and tourism revenues but are directly related to societal welfare and sustainable development. This economic infrastructure increases individuals' participation in sports while also supporting psychosocial gains such as social attachment, self-sufficiency, and psychological resilience. From a psychosocial perspective, the positive impacts of sports on mental health manifest in various aspects such as stress reduction, prevention of depression, and strengthening social integration. Directing economic resources towards the accessibility and quality of sports allows individuals to improve both their physical and psychosocial health through sports. Thus, there exists a mutually reinforcing relationship between sport economics and psychosocial factors, which further enhances the importance of sports for public health and economic sustainability.

The frequencies of articles addressing the relationship between sports, economics, and psychosocial aspects over time are presented in Figure 10.

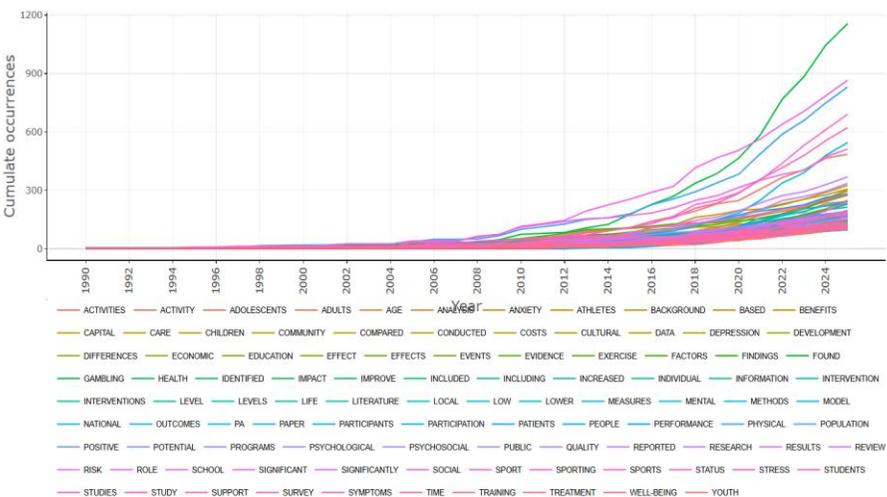


Fig 10. Frequency of words over time



According to Figure 11, from the 2010s onwards, key concepts in the field of sports and health have shown a significant increase over the years, with this trend gaining momentum after 2020. This increase reveals that sports have evolved into a multidimensional structure, not just as a physical activity but also closely related to economic development and psychosocial well-being. Notably, terms such as economic, psychosocial, motivation, participation, intervention, well-being, resilience, and rehabilitation have become central trending topics in recent years.

This trend indicates that sports economics has become an important area not only in terms of sector growth but also in relation to individuals' access to sports, the expansion of activities, and investments in public health. Additionally, psychosocial factors such as depression, mental health, psychological support, social participation, motivation, and social integration highlight the effects of sports on individual well-being. The increased interest in these concepts, particularly after the pandemic, signals the rising demand for sports' role in enhancing mental resilience.

Thus, the trending topics presented in Figure 11 illustrate that there is a bidirectional, mutually reinforcing relationship between sport economics and psychosocial factors, positioning sports as a strategic tool that strengthens both societal economic sustainability and individuals' psychosocial well-being.

The conceptual structure map of articles discussing the relationship between sports, economics, and psychosocial aspects is presented in Figure 12.

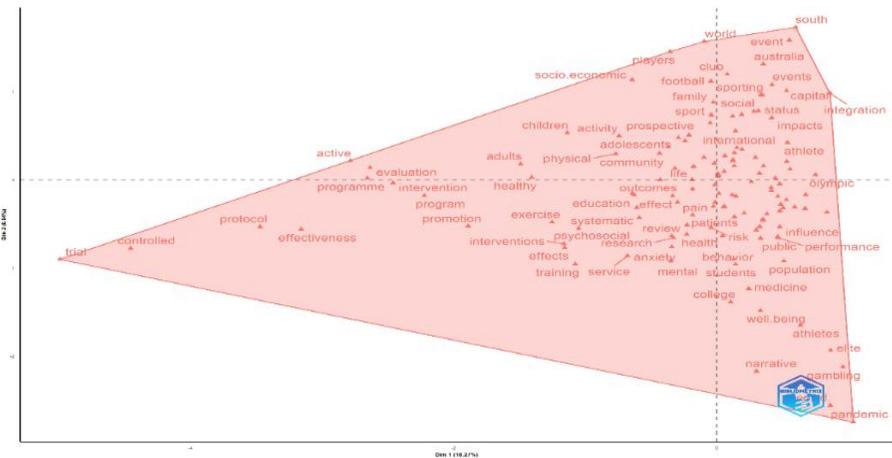
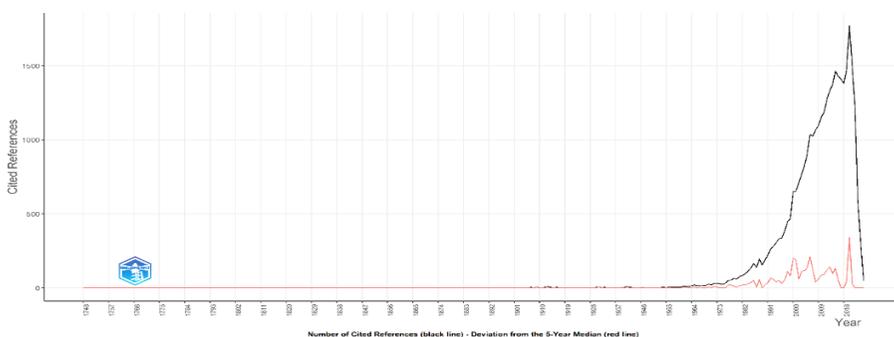


Fig 12. Conceptual structure map

As seen in Figure 12, the conceptual structure map obtained through factorial analysis illustrates the clustering of conceptual structures in studies published in the field of sport economics and psychosocial relationships. The map includes terms related to experimental research such as intervention, program, effectiveness, and protocol, as well as terms associated with mental health and contemporary psychosocial issues, such as well-being, anxiety, pandemic, mental health, and athletes. Additionally, terms like football, society, education, health, and exercise appear, indicating a focus on interdisciplinary convergence.

The reference spectroscopy of articles discussing the relationship between sports, economics, and psychosocial aspects is presented in Figure 13.



**Fig 13.** Reference spectroscopy

According to the Reference Spectroscopy data in Figure 13, there has been a noticeable upward trend in citation counts for academic studies in the field of sports and health since 1990. The number of citations, which was 189 in 1990, steadily increased in the following years, with the growth rate accelerating particularly in the 2000s. From 2000 to 2010, there was a gradual increase, while the rise became sharper after 2010. In 2015, the citation count reached 1,465, and by 2020, it had further increased to 1,770, indicating a period of intense scientific interest in the field. This period shows that sports were being considered multidimensionally in the academic community, not just for their physical effects, but also for their psychosocial, economic, and societal impacts.

However, this upward trend reversed after 2021, with a rapid decline observed in the following years. The number of citations fell to 1,504 in 2021, then dropped to 1,217 in 2022, 592 in 2023, and 294 in 2024, reaching significantly low levels. The year 2025 stands out as the lowest in the analysis

period, with just 48 citations. This decline could be due to the fact that the year is not yet complete, delayed citation processes, transformations in digital publishing, saturation within the field, or external factors such as shifts in research priorities following the COVID-19 pandemic. The pandemic significantly affected the physical and mental health of athletes, as highlighted in related literature (Bhatia et al., 2020; Hu et al., 2020), which emphasized the role of regular exercise in preventing psychosocial issues such as anxiety and depression. However, the restrictions during the pandemic led to a decrease in sports activities, negatively affecting athletes' psychosocial well-being (Pálvölgyi et al., 2020). This situation demonstrates that the supportive role of sports in mental health, especially during crisis periods, faces serious sustainability threats.

## Discussion and Conclusions

The bibliometric analysis conducted in this study demonstrates a substantial rise in academic interest in the interdisciplinary field of sport economics and psychosocial relationships. The number of publications, which began to gain momentum after 2010, has shown a sharp increase since 2020, underscoring the growing scientific and societal relevance of this domain. Furthermore, the results of the three-field analysis reveal strong thematic linkages between author-selected keywords and the journals of publication. The frequent occurrence of terms such as *sport*, *economics*, *psychosocial*, *health*, and *physical activity* clearly reflects the conceptual core and evolving focus areas of the field.

The thematic map analysis indicates that sport and physical activity occupy a central position, closely linked to themes of economic impact and psychosocial factors. Terms such as *mental health*, *social integration*, and *economic sustainability* suggest that sport plays a pivotal role not only in enhancing individual well-being but also in promoting societal development and resilience. Over time, the thematic evolution reveals a clear transition from *physical activity*-focused studies toward more nuanced psychosocial topics, including *mental health*, *behavioral interventions*, *social media influences*, and *substance use*. At the same time, research on economic aspects—such as *sports tourism*, *management*, and *mega-events*—continues to maintain a prominent place in the literature.

Emerging and contemporary themes such as the metaverse, artificial intelligence, digital health applications, and post-pandemic psychosocial support illustrate how the field has evolved in parallel with technological innovation. However, the COVID-19 pandemic challenged sport's supportive role in mental health due to restrictions on physical activity and the psychosocial consequences of social isolation, while simultaneously disrupting the global sports economy. This period revealed the close interdependence between the economic sustainability of sport and its psychosocial benefits, emphasizing the need for interdisciplinary and integrated approaches to sustain both dimensions under crisis conditions (Di Cagno et al., 2020; Kelly et al., 2022; Sayyd et al., 2021).

Thus, sport economics and psychosocial factors, with their complementary and integrative structures, are increasingly gaining ground in the sports science literature. This study clearly demonstrates that sports are not only a physical activity but also a strategic tool for individual well-being, social integration, economic development, and sustainable societal progress.

The integration of the economic and psychosocial dimensions of sport—particularly regarding its effects on mental health, social inclusion, and community interaction—remains an area in need of further exploration. The *Ahead of the Game (AOTG)* study by Eckermann et al. (2021) partially addresses this gap by comprehensively evaluating both the psychosocial outcomes and the implementation costs of mental health promotion strategies. This interdisciplinary approach provides a valuable framework for assessing the multidimensional benefits of sport and for reinforcing the conceptual and empirical links between sport economics and psychosocial research. Future studies should further examine this relationship across diverse demographic and socio-economic contexts, as such efforts will be essential for designing sports policies that optimize both economic efficiency and social well-being.

In recent years, sport has evolved from being merely a physical activity into a multifaceted social and economic phenomenon that shapes individual lives through its psychological, social, and financial dimensions. With the rapid advancement of digitalization, sport has also become intertwined with emerging economic trends such as online gambling, bringing new psychosocial risks alongside financial opportunities. In this context, Yimer (2025) demonstrates how sport, through its association with online betting, has shifted from a recreational pursuit to a determinant of young people's social and economic

behaviors. Using multiple regression analysis, the study identifies significant relationships between gambling behavior and variables such as psychological well-being and financial distress. The risky behaviors and intervention strategies emphasized by Yimer align closely with the thematic domains identified in this study-namely mental health, social integration, and economic sustainability-further supporting the interconnected nature of sport's economic and psychosocial dimensions.

Furthermore, the recommendation to move beyond purely quantitative designs and adopt holistic approaches supported by qualitative methods-such as focus group discussions and in-depth interviews-represents a valuable contribution to deepening the understanding of sport's psychosocial effects. In line with this perspective, future research should explore how technological advancements and socio-economic conditions shape the experiences and behaviors of young individuals, employing larger samples and interdisciplinary frameworks to capture the complex, multidimensional nature of these relationships.

In parallel with the findings of this study, the bibliometric analysis conducted by Yılmaz (2024) underscores the growing influence of metaverse and artificial intelligence (AI) technologies within the fields of sport and recreation. Future research should undertake a more detailed examination of how metaverse technologies affect sport economics, particularly through the emergence of virtual reality environments that host sports events and digital fan experiences. These innovations have the potential to generate new revenue models and transform consumer engagement in the sports industry. Accordingly, it is crucial to explore both the economic implications of the metaverse on consumer behavior and its psychosocial effects on users. Similarly, Dertli and Erden Dertli (2025) emphasize that the integration of sport sciences and technology has become an increasingly significant research focus in recent years, reflecting the interdisciplinary expansion of the field.

In this context, the analysis of sport economics and psychosocial relationships, as presented in this study, should be expanded to include an in-depth exploration of how metaverse and artificial intelligence technologies will shape the future of sport economics. The transformative potential of these technologies-affecting both the economic structures and psychosocial dimensions of sport-should be examined more comprehensively through interdisciplinary research, integrating insights from economics, psychology,

and technology studies.

### *Suggestions / Recommendations*

Based on the findings of this study, it is recommended that future research in the fields of sports economics and psychosocial studies adopt interdisciplinary approaches. In particular, the impacts of technological developments such as artificial intelligence, the metaverse, and digital health applications on sports should be examined in greater depth. In the post-pandemic period, the relationship between the role of sports in enhancing psychological resilience and economic sustainability should be explored in more detail, with a focus on youth, disadvantaged groups, and different socio-economic segments. Greater emphasis should be placed on qualitative research methods to evaluate the multidimensional effects of sports on individuals' mental health and social integration. Furthermore, the long-term socio-economic impacts of mega sporting events should be addressed within the framework of sustainability, and international collaborations should be encouraged.

### *Limitations*

This study is limited to data obtained from the Web of Science database as of July 2025. Only publications indexed in SSCI, SCI-Expanded, ESCI, and A&HCI were included, excluding studies outside the WoS database. Although the selected keywords cover specific thematic areas, they may not fully represent the entire literature. Additionally, as bibliometric analysis focuses on structural patterns, it may carry certain limitations in terms of content depth. The findings should be interpreted within this framework.

### *Conclusion*

This study examined the intersection of sports economics and psychosocial domains through bibliometric methods, revealing academic trends, key concepts, and thematic developments in the field. The findings indicate that sports have significant impacts not only physically but also economically and psychosocially on both individual and societal well-being. Increasing digitalization and global crises have further emphasized the importance of addressing these areas together. In the future, interdisciplinary studies that holistically examine the effects of technological advancements and socio-economic changes will be essential.

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### Author contributions

The author contributed to the manuscript's conceptualization, analyzed, editing, and finalization.

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### Ethical statement

This article does not contain any studies with human participants performed by any of the authors.

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