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Research Article

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A Bibliometric Evaluation of the Relationship Between Sports, Psychology, and Economics

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Abstract
This study aimed to examine the interdisciplinary relationship between sports, psychology, and economics through a comprehensive bibliometric analysis. A total of 335 publications indexed in the Web of Science (WoS) database were identified in the second quarter of 2025 using an advanced search within the abstract field. The data were analyzed using Bibliometrix R and VOSviewer software. The analysis included annual publication trends, citation averages, international author collaborations, keyword co-occurrences, and conceptual network structures. Additionally, thematic evolution and the temporal development of research topics were visualized through trending topic maps and co-occurrence networks. The results indicate a notable increase in scientific production at the intersection of these fields, particularly after the mid-2000s, accompanied by a growing conceptual integration. Findings suggest that sports should be approached not only as a physical performance domain, but also as a multifaceted structure shaped by psychological and economic factors. Overall, this study maps the existing literature landscape and provides a conceptual framework that may guide future interdisciplinary research in sports economics and sports psychology.

Keywords
Bibliometric analysis, interdisciplinary research, mental well-being, socio-economic factors, sport science,

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Introduction

In today's world, the interaction between the disciplines of sports, psychology, and economics is becoming increasingly prominent. The connection that young individuals form with sports is not only a result of personal interest and abilities but is also shaped by family economic status, societal structures, and available opportunities. Particularly, structural barriers faced by individuals from low socioeconomic backgrounds not only limit sports participation but also negatively affect fundamental psychological factors such as self-perception, motivation levels, and social adaptation skills (Sanderson & Brown, 2020). This situation demonstrates that sports are not only significant for individuals' physical development but also for their psychological and social growth. Therefore, without addressing both the economic aspects of sports and their psychological impacts together, the full societal benefits of youth sports cannot be adequately evaluated. For this reason, it is crucial to approach the fields of sports, economics, and psychology in an interdisciplinary manner, as this allows for a more effective understanding of the psychological and economic challenges faced by young people and the design of appropriate interventions (Lii, 2023).

Yılmaz and Dertli (2025) emphasize that sports are not just an element of entertainment but are also a field intertwined with economic, psychological, and political contexts that affect social structures. Indeed, the rise of sub-disciplines such as sports psychology and sports economics in recent years has made the necessity of evaluating these three areas in an integrated manner more visible. In this regard, addressing the interaction between sports, psychology, and economics is of great importance. Lu (2024) explores the effects of physical exercise on the consumption psychology and behaviors of different economic sport audiences through cross-theoretical models, revealing the role of sports consumption in economic growth and sustainable development. The interaction between psychological processes at different stages of exercise behavior and economic dimensions is crucial for understanding the multidimensional nature of sports. Therefore, this study aims to explore the integration of the disciplines of sports, psychology, and economics using bibliometric analysis. In line with this goal, the study seeks to answer the following questions:

- Publication Patterns: How has scientific production evolved over time at the intersection of sports, psychology, and economics?

- Collaboration Networks: Which countries, institutions, and authors form the core collaboration structures?
- Conceptual Trends: Which thematic clusters and conceptual linkages define the intellectual structure of this interdisciplinary field?

Sports, psychology, and economics intersect because sport functions simultaneously as a behavioral, social, and financial institution. From a psychological standpoint, sport contributes to the development of motivation, emotional regulation, identity formation, and resilience. Economically, sports systems create labor markets, consumer behaviors, capital flows, and policy-driven resource allocation. Socially, sports generate community belonging, participation networks, and symbolic cultural value. Therefore, examining these three disciplines together allows researchers to understand how individual psychological processes and broader economic structures interact within sport environments, forming a unified interdisciplinary research space.

The interdisciplinary convergence of sports, psychology, and economics can be theoretically explained through Human Capital Theory and Social Capital Theory. Human Capital Theory (Becker, 1964) posits that individuals' physical and psychological development enhances their productivity and long-term socio-economic value. Within this perspective, participation in sport contributes not only to physical performance but also to psychological resilience, motivation, self-regulation, and transferable skills. Meanwhile, Social Capital Theory (Putnam, 2000) highlights how sports form networks of trust, cooperation, and shared identity, which in turn shape both community well-being and societal economic outcomes. These theoretical frameworks provide a conceptual basis for understanding why research across these fields has become increasingly integrated: sports function simultaneously as a site of psychological development and as a socio-economic institution with individual and collective benefits.

Method

In this study, a bibliometric analysis method was employed to reveal the interdisciplinary integration of the fields of sports, psychology, and economics. Scholars use bibliometric analysis for various reasons, such as identifying emerging trends in article and journal performance, exploring collaboration models, uncovering research components, and examining the intellectual

structure of a specific field within the existing literature (Donthu et al., 2020; Donthu et al., 2021a; Donthu et al., 2021b; Verma & Gustafsson, 2020). The primary data for this study were collected from the Web of Science (WoS) platform, one of the most comprehensive academic literature databases worldwide (Millet et al., 2021). This database stores and categorizes high-quality bibliographic and citation information that can be examined through bibliometric software tools (Tsilika, 2023; Dertli & Erden Dertli, 2025). At the data collection stage, an advanced search was conducted in the abstract (AB) field in the second quarter of 2025 using the expression *AB = (sport AND psycholog* AND economic), which allowed the retrieval of publications explicitly addressing the intersection of sports, psychology, and economics.

A total of 335 publications related to the intersection of sports, psychology, and economics were identified through an advanced search in the abstract (AB) field of the Web of Science Core Collection database, based on the expression *AB = (sport AND psycholog* AND economic), which ensured the selection of studies explicitly addressing the interdisciplinary relationship between these fields.

The use of bibliometric analysis typically extends from graphical user interface-based software, such as VOSviewer (Van Eck & Waltman, 2010), to command-based software like the Bibliometrix package in R (Aria & Cuccurullo, 2017), which are used alongside network visualization tools (Donthu et al., 2021a). In the data analysis process, bibliometric packages such as the Bibliometrix library in R Studio, as used by Büyüksıdık (2022) and Türkoğlu & Semiz (2025), were employed. Furthermore, visualization of the bibliometric data was conducted using VOSviewer, a commonly preferred tool for mapping and network analysis. This allowed for a detailed visualization and interpretation of the interdisciplinary publication structure, collaboration networks, and the locations of key concepts. During the analysis process, trends in annual scientific production was examined to track the development of the research field over time. Additionally, inter-country collaboration relationships and networks were visualized and analyzed based on the number of joint publications between countries. In this context, the intensities of scientific collaboration between different countries and the dynamics of these collaborations were revealed. For keyword and topic analysis, the change in frequently occurring terms over time was monitored. This enabled the analysis of keyword frequencies, co-occurrence word density maps, and trending topic

analyses. Additionally, to better understand the relationships between topics, a topic dendrogram analysis was conducted, visually revealing the proximity of interdisciplinary concepts.

Findings

A total of 335 documents published between 1980 and 2025 in the fields of sports, psychology, and economics were identified in the dataset. These documents were sourced from 260 different sources, with an annual average growth rate of 6.63%. This indicates a steady increase in scientific interest in these fields over time. The average age of the documents was calculated to be 7.74 years, and the average citation per document was 19.88, highlighting strong academic interest in the studies. In terms of content, 784 "Keyword Plus" (ID) terms and 1,172 author-defined keywords (DE) were identified. Looking at the author profile, a total of 1,179 different authors contributed to the publications. Among these authors, only 57 participated in single-author documents, while the average number of co-authors per document was 3.6, indicating a high trend of collaboration in the field. Additionally, it was found that the international co-authorship rate was 19.4%. All these findings suggest that scientific production at the intersection of sports, psychology, and economics has increased over time. The findings related to annual scientific production values are presented in Figure 1.

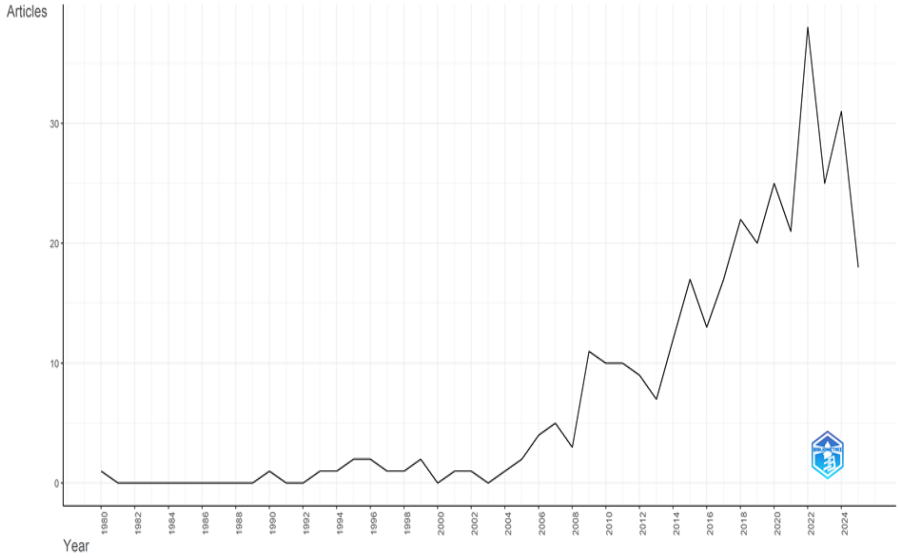

Fig 1. Annual scientific production

Figure 1 reveals that academic publication production in the fields of sports, psychology, and economics has shown a significant increase over the years between 1980 and 2025. In the 1980s and 1990s, the number of publications remained at very low levels, with no publications in many years. This suggests that interdisciplinary studies were limited during this period. However, from the mid-2000s, there has been a noticeable increase in the number of publications.

The upward trend, which started with 11 publications in 2009, continued with 12 publications in 2014, 17 publications each in 2015 and 2017, 22 publications in 2018, and 25 publications in 2020. The highest number of publications was reached in 2022, with 38 publications. These findings indicate that the topic has gained increasing attention in the scientific literature and that academic production in this area has grown. In this context, it is found that scientific production in sports, psychology, and economics has shown a steady increase since the mid-2000s, and the interdisciplinary approach at the intersection of these three fields accelerated after 2020. Findings related to the annual average citation counts are presented in Figure 2.

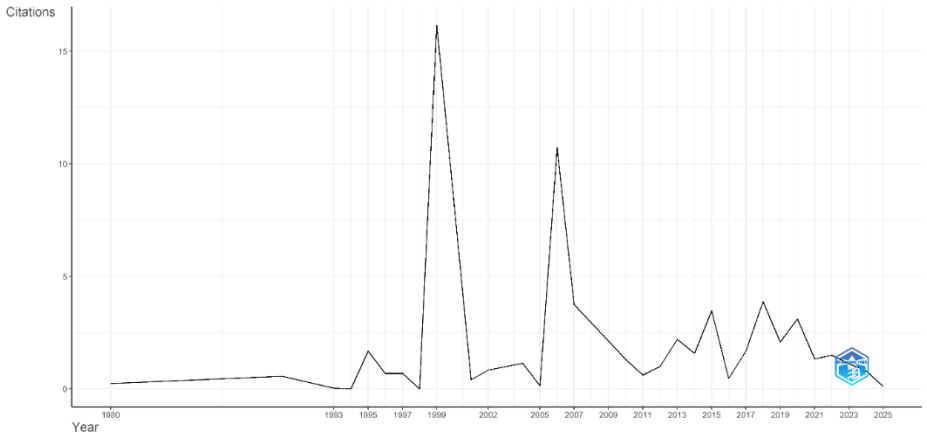

Fig 2. Average citations per year

As seen in Figure 2, the year 1999 stands out with an average of 436.5 total citations for 2 publications and a remarkable annual average of 16.17 citations. Similarly, in 2006, 4 publications received an average of 214.5 citations, with an annual average of 10.72, a high value. The period between 2005 and 2015 shows relatively high citation averages. Particularly in 2015, 17 publications received an average of 38.12 citations, with each publication being cited an average of 3.47 times per year. The year 2018 also stands out, with 22

publications receiving an average of 31.05 citations per document and an annual citation rate of 3.88. Despite the increase in the number of publications after 2020, it is noteworthy that the citation averages have decreased. Specifically, the low average citation numbers in 2023, 2024, and 2025 indicate that these publications have not yet fully reflected their academic impact. Findings related to the countries of the corresponding authors are presented in Figure 3.

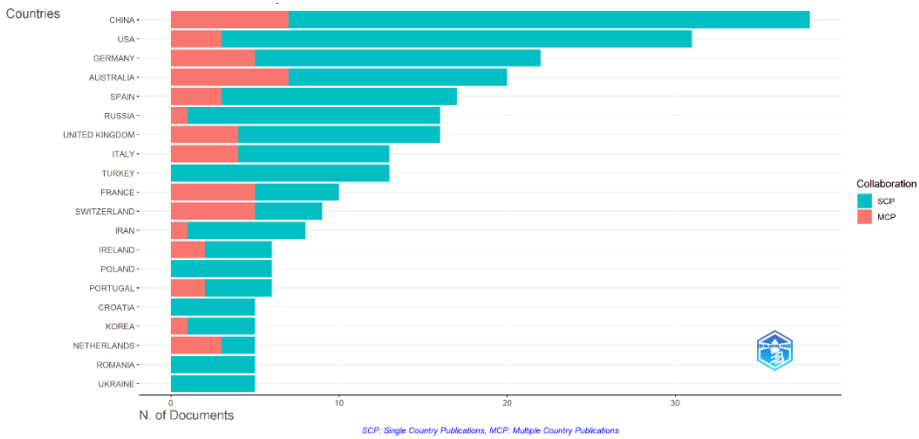

Fig 3. Corresponding author's countries

As seen in Figure 3, China ranks first in terms of corresponding author production with 38 publications, and 18.4% of these publications are based on multinational collaborations. The United States ranks second with 31 publications, while the collaboration rate is 9.7%. Germany (22 publications) and Australia (20 publications) stand out with higher multinational collaboration rates; in particular, Australia's 35% MCP rate indicates that the country is open to international research collaborations. Turkey, on the other hand, produced all 13 publications within a single country, and its MCP rate remained at 0%. This suggests that research in Turkey is largely conducted at the national level. Similarly, countries like Poland, Romania, Ukraine, Brazil, and South Africa also conducted all their publications independently. In contrast, countries such as Switzerland (55.6%), the Netherlands (60.0%), France (50.0%), Hungary (50.0%), and Austria (100%) stand out with high MCP rates, meaning that corresponding authors in these countries are more involved in international partnerships. Findings related to the country citation network are presented in Figure 4.

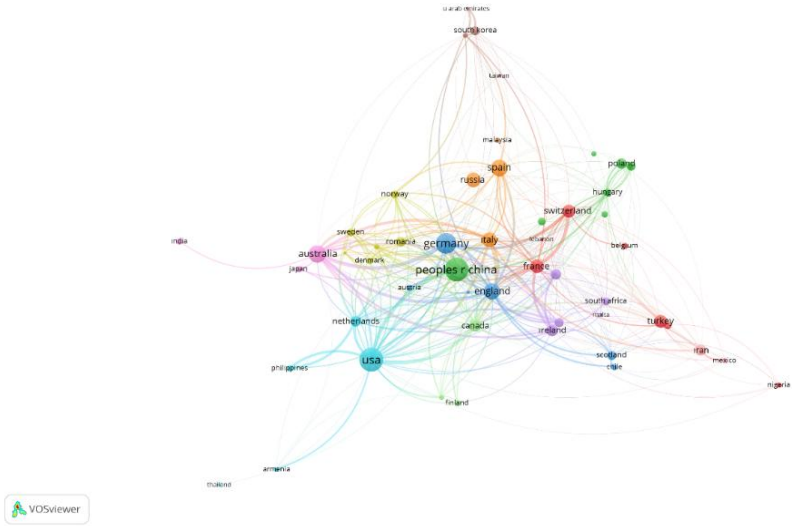

Fig 4. Country citation network

Figure 4 reveals that the country citation network map consists of 55 nodes, 11 clusters, 404 connections, and a total connection strength of 11,823. When citation counts are examined, the countries with the most citations are the United States with 1,927 citations, the United Kingdom with 1,669 citations, Australia with 703 citations, Italy with 533 citations, and Scotland with 484 citations. These countries are followed by Turkey with 346 citations, Spain with 308 citations, the Netherlands with 295 citations, and Canada and Sweden, each with 291 citations. Findings related to country collaboration are presented in Figure 5.

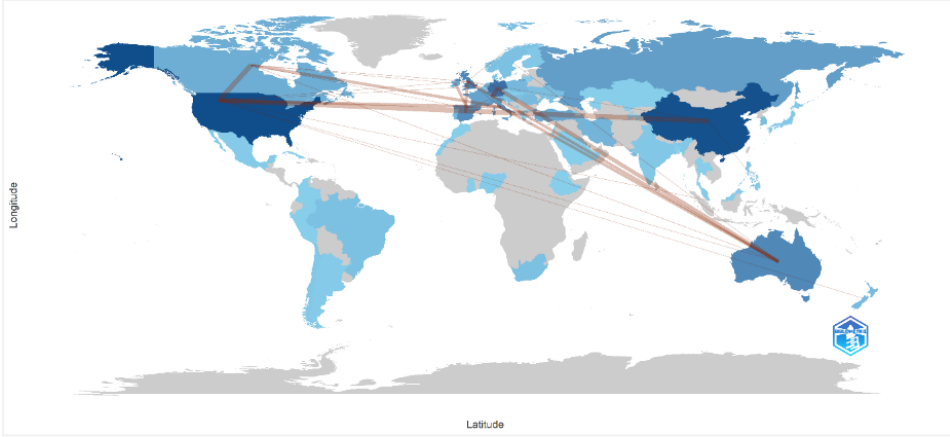

Fig 5. Countries' collaboration world map

Figure 5 shows that 93 different bilateral country collaborations related to the relationship between sports, psychology, and economics have been identified. Among these collaborations, the United States was found to have the highest frequency. Specifically, the United States-Canada and United States-China pairs, with 5 publications each, emerged as the most frequent collaborators. These are followed by Germany-Australia and Germany-Switzerland collaborations, with 4 publications each. The United Kingdom, one of the countries with the largest network of connections, has collaborated with 9 different countries, totaling 19 collaborations. In this regard, it can be said that European-centered research networks are at the core of this collaboration. Australia has also been involved in over 20 collaborations with 11 countries, particularly standing out with its connections to Italy, Canada, Sweden, and New Zealand. Among the rising collaborations, China has collaborated with a total of 12 countries, including both Asian countries like South Korea and the Philippines, as well as European countries such as Italy, the Netherlands, and Norway. This highlights China's growing contribution to the international literature in the fields of sports psychology and economics. Findings related to the countries' production values over time are presented in Figure 6.

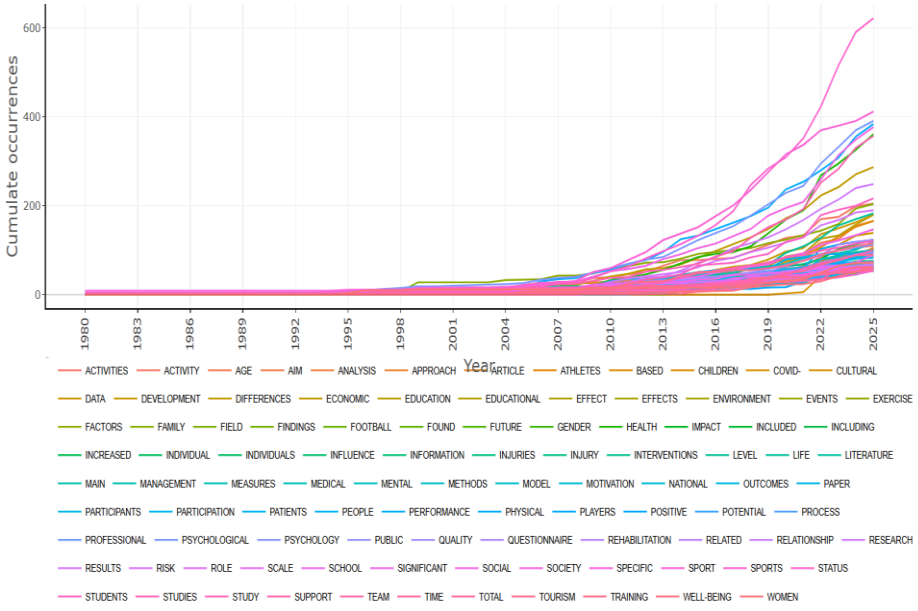

Fig 6. Words' frequency over time

According to the word frequency analysis in Figure 6, significant changes and interdisciplinary integration are observed in the fields of sports, economics, and psychology from the 1980s to 2025. In the 1980s, the use of words related to sports remained relatively low and stable, while from the early 1990s onwards, concepts such as rehabilitation, social issues, and gender began to appear more frequently in the context of sports. In the 2000s, with the increase in studies on the psychological and social impacts of sports, the use of sports-related terms significantly increased. In the field of economics, from the mid-1990s, an increase in terms related to words such as national, differences, and growth indicated that the economic dimensions of sports began to receive more attention in research. Under the psychology theme, from the 2000s onwards, the increasing frequency of terms such as rehabilitation, gender, and social concepts indicated that the psychological dimensions of sports and economics were being addressed together. Overall, these data show that, after the 1990s, the word frequency increases in sports, economics, and psychology fields strengthened the interdisciplinary integration, and academic production in these areas became increasingly diverse. These findings support the rise of subfields such as sports economics and sports psychology and emphasize the importance of interdisciplinary approaches. Findings related to trending topics are presented in Figure 7.

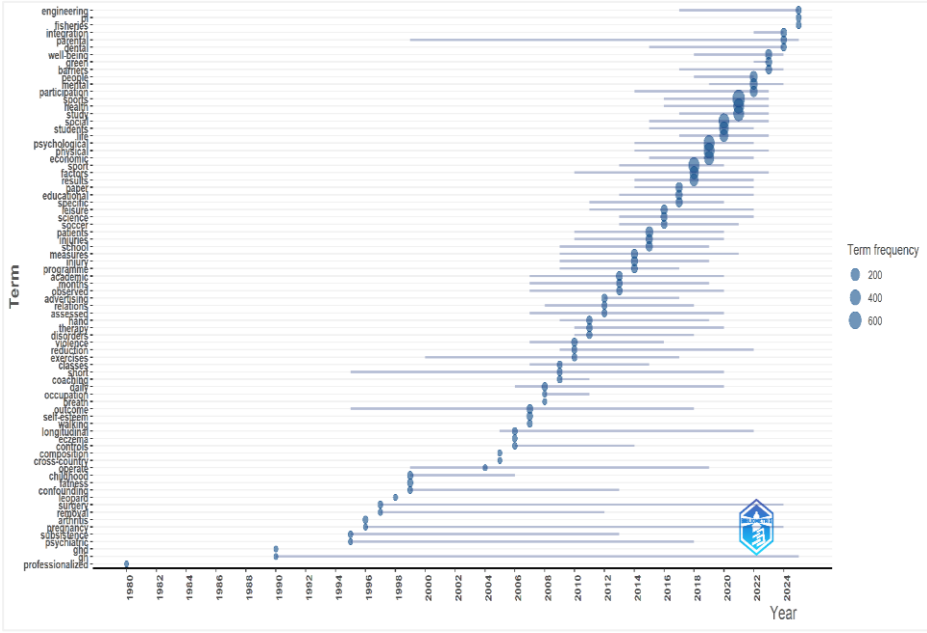

Fig 7. Trend topics

In Figure 9, when examining the trend words emerging in the fields of sports, economics, and psychology, the changes in word frequencies and the rise of new concepts are noteworthy. Trends that began in the 1980s with words like "professionalized" diversified in the 1990s with terms related to health and psychology, such as "psychiatric," "arthritis," and "childhood." In the 2000s, psychological and social concepts like "self-esteem," "violence," and "therapy" gained importance, while terms related to sports and health, such as "exercise," "injury," and "patients," became more frequent. Particularly from the 2010s onward, keywords such as "sport," "psychological," "economic," "social," and "health" came to the forefront, indicating that the economic, psychological, and social dimensions of sports are being addressed interdisciplinarily. By the 2020s, words like "integration," "well-being," and "participation" have emerged as trends, signaling that the fields are becoming more interconnected. These data show that sports, psychology, and economics are increasingly integrating with one another. Findings related to the co-occurrence word density map are presented in Figure 8.

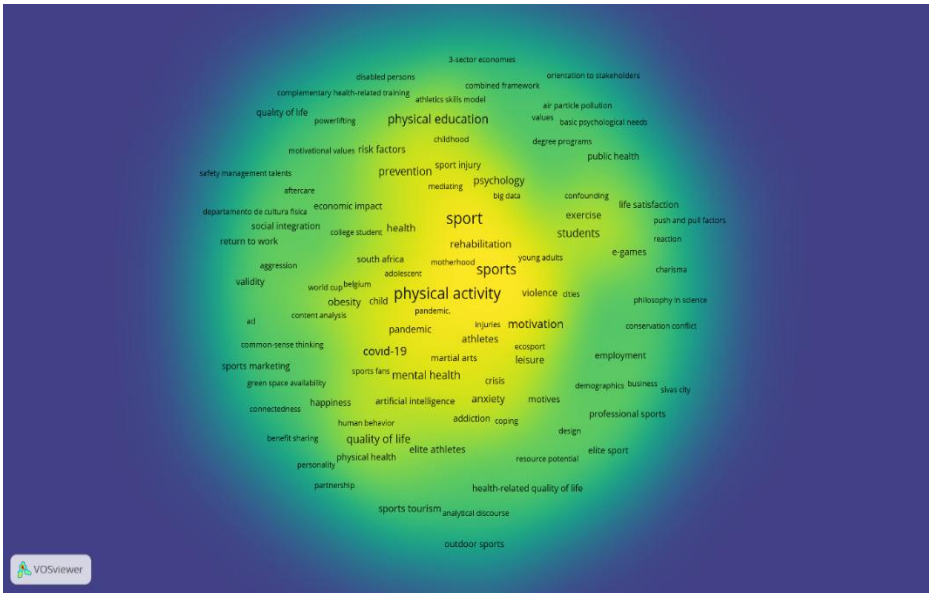

Fig 8. Co-occurrence word density map

The co-occurrence word density map in Figure 10 shows that the fields of sports, psychology, and economics are in strong and interdisciplinary relationships with each other. Terms such as "economic impact," "employment," and "social integration" highlight that sports are not just an

economic activity; they are intertwined with social and psychological dimensions. Keywords from the field of psychology, such as "mental health," "motivation," "well-being," "self-efficacy," and "rehabilitation," indicate that the economic impacts of sports also play a significant role in individuals' psychological state and quality of social life. In particular, the increased frequency of words like "well-being" and "rehabilitation" alongside economic factors suggests that the economic investments in sports have value not only financially but also in terms of psychological recovery and improving life quality. According to Turaç (2024), the economic dimension of sports contributes to increased individual and societal well-being by affecting individuals' motivation, psychological resilience, and social integration. In this context, economic investments in sports, through the provision of job opportunities and social participation, can positively influence people's psychological health. This demonstrates that the interaction between sports economics and psychology is a multidimensional and mutually beneficial relationship. The co-occurrence word density map points to interdisciplinary studies investigating the effects of economic factors on psychological health and social integration at the intersection of sports economics and psychology. Findings related to the co-occurrence network are presented in Figure 9.

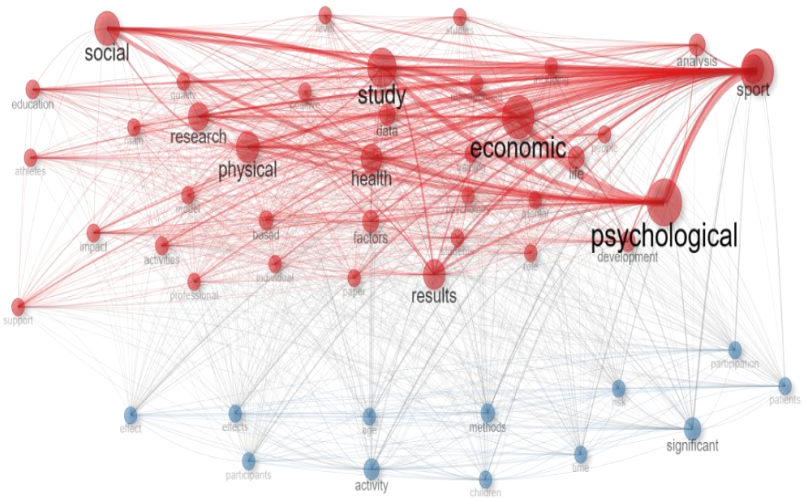

Fig 9. Co-occurrence network

In Figure 9, the words in central positions, such as "sport," "economic," "psychological," "study," and "health," attract attention due to their high number of connections. This indicates that these concepts play complementary

roles in research. The frequent connections between the terms "sport" and "economics" highlight that topics such as the economic impacts of sports, professionalization processes, and financial management are increasingly being addressed. Moreover, the frequent use of words related to psychology, such as "mental," "motivation," "support," "stress," and "individual," alongside sports, reveals that the field of sports psychology is on the rise. At the intersection of sports economics and psychology, factors like performance, motivation, and mental resilience stand out, showing that athletes' psychological states are being linked to economics. All these findings suggest that, beyond its physical aspects, sports have become an interdisciplinary research field that also encompasses economic and psychological dimensions. Findings related to the topic dendrogram are presented in Figure 10.

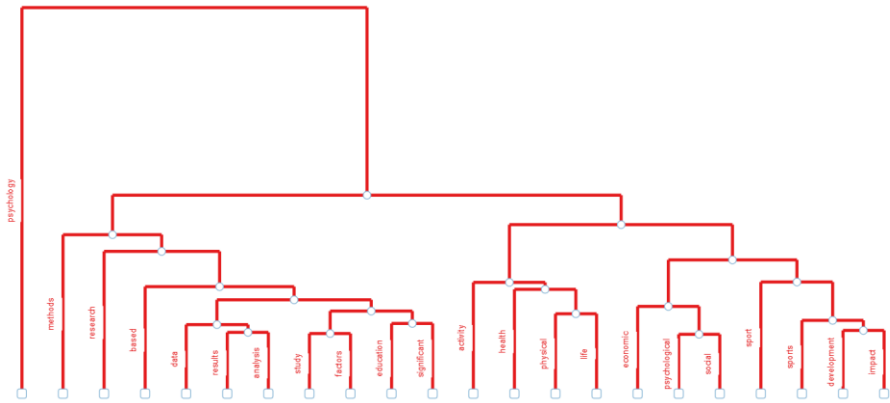

Fig 10. Topic dendrogram

In Figure 10, the topic dendrogram shows that scientific production-related terms such as "methods," "research," "data," "results," and "analysis" cluster together, indicating that sports psychology and sports economics are grounded in methodological foundations. This cluster reveals how research-based approaches are intertwined with psychology. Additionally, the inclusion of terms like "activity," "health," "physical," "life," "economic," "psychological," "social," and "sport" in a single cluster highlights that individual physical activities are directly related not only to health but also to psychological well-being and economic conditions. This finding supports the idea that the multidimensional nature of sports and its impact on an individual's quality of life are evaluated from an interdisciplinary perspective. Furthermore, the close positioning of words like "development" and "impact" with "sport"

and"economic" indicates that research focuses not only on the contribution of sports to economic development but also on its effect on individual development. All these findings demonstrate that the intersection of sports, psychology, and economics is being studied in an integrated manner.

Discussion and Conclusions

This study comprehensively examines the scientific literature at the intersection of sports, psychology, and economics through bibliometric analyses, revealing how these three fields have integrated and have been increasingly addressed together over time. The 335 publications obtained from the Web of Science database were evaluated using bibliometric analysis, demonstrating that an interdisciplinary approach has been gaining momentum. Notably, since the mid-2000s, scientific production in this field has significantly increased, peaking in 2022. Word frequencies and trending topics have shown that this increase is not limited to numerical intensity but also represents a significant development in terms of content diversity. The prominence of terms such as "well-being," "integration," "rehabilitation," and "participation" indicates that the economic and psychological aspects of sports are being more frequently associated with societal contexts. The co-occurrence word density map shows that concepts like "economic impact," "employment," "social integration," "mental health," "motivation," and "self-efficacy" are increasingly used together, highlighting that the multidimensional nature of sports is being addressed with an interdisciplinary approach.

The conceptual network map reveals that terms with high connection strength, such as "sport," "economic," "psychological," "study," and "health," indicate that these fields are being evaluated in a complementary manner. The topic dendrogram, by clustering terms like "methods," "data," "results," and "analysis" with terms such as "activity," "health," "economic," "psychological," and "social," shows that sports economics and sports psychology are built on research-based methodological foundations. All these findings provide strong indicators that sports are not just a physical activity, but are also directly connected to individual psychological well-being, societal welfare, and economic sustainability.

As emphasized by Sanderson and Brown (2020), sports are not only a physical activity but also strongly connected to individual psychological well-being, societal welfare, and economic sustainability. Economic inequalities in

youth sports affect access to sports and psychological development; therefore, addressing the economic and psychological dimensions of sports together is likely to make a significant contribution to the literature. In this context, future research should focus on examining the impact of sports on psychological health alongside economic variables, comparing macro and micro-level sports policies, increasing studies focused on the role of sports in developing countries, and deeply investigating economic and psychological opportunity inequalities in the context of gender. Additionally, concepts such as self-efficacy, resilience, and burnout should be further explored within the framework of sports economics and psychology, which is expected to deepen the theoretical foundation of the field. As a result, this study demonstrates that considering sports as a multidimensional tool in both psychological and economic development processes within an interdisciplinary framework can contribute to the literature.

As mentioned in Yimer (2025), future research should address several key issues to better understand the dynamics at the intersection of sports, psychology, and economics. In particular, longitudinal studies should examine the interactions between economic, social, and psychological factors over time and the long-term effects of various interventions. Comparative research between different regions and countries will highlight regional differences in the economic and psychological impacts of sports, contributing to the generalization of findings. Furthermore, evaluating the effectiveness of intervention strategies designed to increase youth participation in sports and support psychological well-being will provide important guidance for policymakers and practitioners. Considering cultural and demographic variables will allow for a more comprehensive understanding of the complex interactions in this interdisciplinary field.

The findings of this study have important implications for policymakers and practitioners. Increasing access to community sports programs may contribute to psychological well-being and reduce inequalities caused by socioeconomic disparities. Governments and institutions can support interdisciplinary sports policies by integrating economic investment strategies with psychological development programs. Additionally, coaches, educators, and sports managers can design interventions that simultaneously strengthen mental resilience, promote social participation, and ensure sustainable resource use in sports environments.

According to Alwan et al. (2023), in the field of sports, perfectionism, performance pressure, and competitive conditions can increase stress levels, while economic conditions can play a determining role in either alleviating or exacerbating this psychological burden. The strategies used to cope with perfectionism play a decisive role in the psychological health of individuals. However, research on the relationship between these psychological processes and young individuals in the fields of sports and economics is still limited. Coping strategies such as seeking social support, problem-solving, and cognitive restructuring has been found to be effective in reducing the negative effects of perfectionism and enhancing individuals' psychological resilience. Therefore, the psychological challenges faced by young people in the fields of sports, economics, and engineering should be addressed through interdisciplinary approaches and personalized interventions. Future studies are expected to contribute to the development of sustainable support systems by further exploring the relationship between perfectionism and psychology across different disciplines.

Recommendations

In light of the findings of this study, future research should adopt multidisciplinary approaches to further explore the interactions between the fields of sports, psychology, and economics. In particular, quantitative and qualitative studies investigating the psychosocial and economic impacts of digitalization on sports participation will significantly contribute to filling current gaps in the literature. Evaluating the effects of sports on psychological resilience, motivation, and social integration in the context of economic inequalities and socio-demographic variables will help to uncover disparities in opportunities among different population groups. Moreover, comparative studies on the micro and macro-level impacts of sports policies in developing countries are needed. The effects of emerging technologies such as artificial intelligence, augmented reality, and the metaverse on psychological well-being and sports engagement should also be addressed as promising areas of future inquiry.

Limitations

This study is limited to data obtained solely from the Web of Science (WoS) database, covering publications indexed in SSCI, SCI-Expanded, ESCI, and A&HCI. As a result, research found in other academic databases was excluded,

which may narrow the scope of the analyzed literature. Additionally, the search was conducted based only on the "abstract" field, and thus the full-text content of the publications was not considered. As a method, bibliometric analysis focuses primarily on the structural and quantitative characteristics of academic production, which may lead to limitations in terms of in-depth content interpretation. Therefore, the findings should be interpreted within the boundaries of this methodological framework.

Conclusion

This study examined the interdisciplinary intersection of sports, psychology, and economics through bibliometric methods and revealed a growing conceptual integration among these fields. The sharp increase in publications after the mid-2000s appears to be associated with global socio-economic developments, rising public health concerns, and a greater recognition of sports as a vehicle for psychological well-being and social participation. As societies increasingly face issues such as sedentary lifestyles, mental health challenges, and widening economic disparities, the role of sport has been reconceptualized from a purely performance-oriented practice to a multidimensional social resource. This shift explains the clustering of keywords such as “well-being,” “participation,” and “rehabilitation,” and the emergence of research themes linking sports to mental health support and economic sustainability.

The co-occurrence and conceptual network analyses show that the terms “sport,” “economic,” “psychological,” and “health” form a coherent interdisciplinary research structure. In other words, contemporary research now tends to evaluate sports not only in terms of individual physical performance but also in relation to social welfare, personal development, and public policy outcomes. Future research should further investigate how technological innovations, professionalization trends, and global economic transitions reshape the psychological and financial dimensions of sport. By emphasizing the interconnected and layered nature of these domains, this study highlights the importance of adopting a comprehensive interdisciplinary approach to better address complex social, psychological, and economic challenges within sport contexts.

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Author contributions

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

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Ethnical statement

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

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