

Bibliometric Analysis Technique in Sports and Economics Studies: A New Approach

Spor ve Ekonomi Çalışmalarında Bibliyometrik Analiz Tekniği: Yeni Bir Yaklaşım

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Abstract

In recent times, the intersection of sports and economics has emerged as a focal point of academic research in terms of sustainable development. The use of bibliometric analysis technique offers both a retrospective and up-to-date perspective on existing research, while also providing valuable insights and projections for future studies, making it a crucial resource for the next generation of scholars. In this study, 112 significant works in the field of sports economics, published between 2005 and 2023, were comprehensively examined using the Web of Science (WOS) database. The integration of Power BI, R programming, and bibliometric software facilitated a meticulous examination of publication scope, the scientific strength of nations and academic institutions, and the interpretation and visualization of findings based on conceptual frameworks. Notably, this study highlights the considerable academic contributions not only from Western countries but also from regions such as Asia and Africa, showcasing the global impact of research in this field. Additionally, the thematic diversity extends beyond traditional economic assessments of sports markets and industries to encompass contemporary priorities such as the intersection of sports with political dynamics, gender dynamics, the growing influence of online gaming, the unique challenges posed by the COVID-19 pandemic, and the socioeconomic impacts of large-scale sporting events.

Keywords: Bibliometric, Biblioshiny, Economy, Sport economy, Power bi

Öz

Günümüzde, spor ve ekonominin kesişimi, sürdürülebilir kalkınma açısından akademik araştırmaların odak noktası haline gelmiştir. Bibliyometrik analiz tekniğinin kullanımı, mevcut araştırmalar üzerinde hem geçmişe dönük güncel bir bakış açısı sunarken hemde gelecek araştırmalar için bilgi ve öngörü sağlamaktadır. Bu da gelecek kuşak araştırmacılar için önemli bir kaynak niteliği taşımaktadır. Bu çalışmada, 2005 yılından 2023'e kadar olan dönemde, spor ekonomisi alanındaki 112 önemli çalışması, Web of Science (WOS) veritabanı kullanılarak kapsamlı bir şekilde incelenmiştir. Power BI, R programlama ve bibliyometrik yazılımlar, yayın kapsamını, ülkelerin ve akademik kurumların bilimsel gücünün titizlikle incelenmesine katkı sağlarken kavramsal çerçevelere dayalı olarak yorumlanması ve görselleştirilmesine olanak sağlamıştır. Bu çalışmada dikkat çekici olan, sadece Batı'dan değil, Asya ve Afrika bölgelerinden de kayda değer akademik çıktılar elde edilerek, bu alandaki araştırma katkılarının küresel etkisini ortaya koymaktadır. Ayrıca tematik çeşitlilik, spor pazarlarının ve endüstrilerinin geleneksel ekonomik değerlendirmelerinden, sporun siyasi dinamiklerle kesişimi, toplumsal cinsiyet dinamikleri, çevrimiçi oyunların artan etkisi, COVID-19 pandemisinin getirdiği benzersiz zorluklar ve büyük ölçekli spor etkinliklerinin sosyoekonomik etkileri gibi çağdaş öncelikleri de içermektedir.

Anahtar Kelimeler: Bibliyometrik, Biblioshiny, Ekonomi, Spor ekonomisi, Power bi

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INTRODUCTION

Bibliometric analysis serves as an indispensable tool for measuring, evaluating, and visualizing scientific performance (Moral-Muñoz et al., 2020), providing evidence of the developmental trajectory of studies relevant to the field (Donthu et al., 2021). It contributes an evolutionary contribution regarding the most productive authors, institutions, and countries (Donthu et al., 2020), thus making bibliometric analysis an integral component of the general evaluation methodology in scientific and applied domains (Ellegaard & Wallin, 2015).

Various databases are utilized for bibliometric and scientometric analyses, each serving different purposes. While bibliometric analysis offers comprehensive technique, Biblioshiny proves effective for application, and VOSviewer facilitates information retrieval and visualization from multiple sources (Moral-Muñoz et al., 2020), presenting an alternative option due to the interchangeability and improvable nature of data (Derviş, 2019). The rapid development in the scientific realm and the proliferation of publications underscore the necessity of emphasizing quality (Sheng et al., 2024). Particularly in recent years, the universal perspective aimed at scientifically determining the increase in publication numbers and numerical values through bibliometric analysis technique (Aygün, 2023a). Various disciplines have focused on evaluation and visualization using bibliometric technique to provide a general assessment and highlight the quantity of publications.

Studies in the field of sports science have employed bibliometric analysis technique to conduct comprehensive assessments utilizing data obtained from WoS or Scopus on country, author, journal, and collaboration networks (Aygün, 2023b; Shekhar & Shah, 2023; Hammerschmidt et al., 2023). Additionally, bibliometric analysis technique have been employed to provide a general assessment of topics such as augmented reality and global trends in sports (Zhao et al., 2022), the past-to-future trajectory of sports policy (Moradi et al., 2023), and Olympic Games (Millet et al., 2021).

Web of Science (WoS) and Scopus are two fundamental databases used in the bibliometric analysis process (Pranckutė, 2021). In this paper, bibliometric analyses were conducted using the Web of Science (WoS) database, one of the traditional and widely used methods in bibliometric analysis (Singh et al., 2021). Data usage was restricted to the past 18 years using the keywords 'sports and economics'.

While societies view sports as a social and cultural development, the growth of sports consumption and the sports industry significantly explains the relationship between sports and

economics (Aygün et al., 2023). In terms of the economic dimension of sports, it is observed that Canada, the United Kingdom, Scotland, and Australia have created 2% of employment through sports, New Zealand 1.3%, and Hong Kong 8%. The employment generated by sports is comparable to or exceeds that of many other sectors (Sanderson et al., 2000). Beyond being a source of employment for the economy, people's interest in professional sports has facilitated an economic shift. Therefore, most of the scientific studies conducted in the United States have focused on ice hockey, baseball, American football, and basketball (Gratton et al., 2012). The primary reason for the concentration of scientific studies on specific topics or sports can be attributed to societal interest or research demand. Therefore, the advanced structure and economic magnitude of sports make the examination of the relationship between sports and economics essential.

The aim of this research is to characterize resources, authors, and countries according to bibliometric analysis technique for studies indexed in the Web of Science (WoS) database regarding the utilization of resources in sports and economics from 2005 to 2023, with the goal of forming a conceptual structure. During the formation of this structure, the following questions will be addressed: (i) What are the scientific trends in sports and economics? (ii) Who are the leading institutions/countries in the field? (iii) Who are the most effective publishers on sports and economics topics?

Considering the bovementioned gaps, this research offers a technical, procedural, and innovative approach for readers in scientific research involving the terms 'sports and economics.' Additionally, it provides authors with a different perspective through the method used.

METHOD

Bibliometric analysis is a methodological approach that can be useful for dissecting scholarly literature and understanding the evolution of academic journals. The term 'bibliometric' refers to the mathematical and statistical analysis of patterns embedded within the publication and utilization of documents (Diodato, 1994). This analytical framework provides researchers with a useful tool to navigate the vast expanse of scholarly output, revealing intricate connections and trends that may not be immediately apparent through qualitative examination alone. Recent studies, such as Donthu et al.'s (2021), have expanded upon the foundational work of Diodato (1994) and shed light on the multifaceted nature of bibliometric analysis. While bibliometric studies are undoubtedly quantitative, they provide a nuanced understanding of the cumulative scientific knowledge present in established academic domains. This understanding includes the

interplay of various factors, such as citation patterns, authorship networks, and thematic clusters, providing valuable insights into the dynamics shaping scholarly discourse.

This study examines the intersection of sports and economics, which is a field that draws on multiple disciplines. Research in this area often offers valuable perspectives on the economic foundations of sports industries, consumer behavior, and policy implications. By focusing on this intersection, this study aims to unravel the complexities inherent in scholarly discourse, identifying key themes, seminal works and emerging trends that shape the intellectual landscape of the field. The dataset, which was meticulously sourced from the Web of Science and spans the years 2005 to 2023, serves as the cornerstone of this research endeavour. This timeframe is strategic, allowing for a comprehensive analysis of scholarly output, while ensuring its relevance to contemporary research trends in the field of sport and business. The dataset consists of 112 carefully curated documents chosen specifically within the search field. Through a meticulous curation process, irrelevant articles were eliminated, ensuring a comprehensive representation of scholarly contributions within the designated timeframe.

For bibliometric analysis, this study utilizes Bibliometrix (Aria & Cuccurullo, 2017) and PowerBI for visualization. The bibliometrix is widely recognized for its robust features and capabilities for conducting comprehensive bibliometric analyses. Power BI, on the other hand, offers powerful visualization tools for presenting findings in an intuitive and insightful manner. This study aims to extract valuable insights from the scholarly literature by employing quantitative techniques and dynamic visualization. These tools reveal hidden patterns, influential works, and evolving research trajectories in the interdisciplinary field of sports and economics. The integration of bibliometric analysis and visualization tools within the context of sports and economics is a methodologically rigorous approach to understanding the scholarly landscape. This study aims to contribute valuable insights to both academia and practitioners alike, advancing our understanding of the complex interplay between sports and economics in the modern world.

RESULTS

This section meticulously presents and rigorously analyzes the outcomes of an in-depth bibliometric investigation conducted on scholarly articles within the interdisciplinary realm of sports and economics, leveraging data sourced from the Web of Science database. The temporal

expansion of this scholarly inquiry spans from 2005 to 2023, allowing for a nuanced and thorough exploration of the evolving scholarly landscape at the convergence of sports and economics.

The initial stages of the observed timeframe reveal a conspicuous dearth of publications, indicative of the nascent phase of scholarly discourse within this specific domain. However, as the temporal progression unfolds, a discernible upward trajectory becomes evident, culminating in a noteworthy surge in the number of publications, surpassing the threshold of 20 during the concluding time periods. Notably, the pinnacle was reached in 2022, with a pronounced spike of 23 publications. This ascending trend not only signifies a quantitative proliferation but also serves as an index for the increasing academic interest and active participation in shaping the discourse within the nuanced and intricate realm of sports and economics.

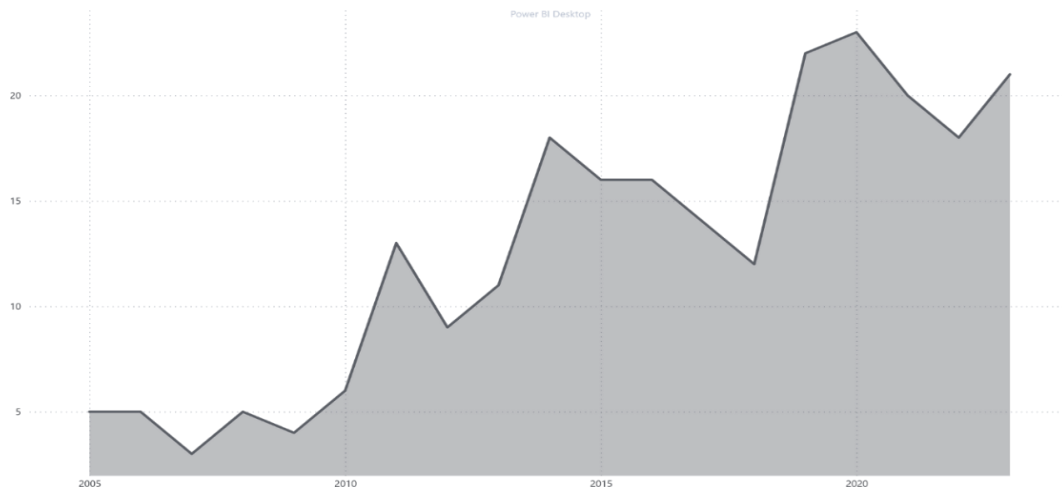


Figure 1. Annual production over time in the sports and economics research

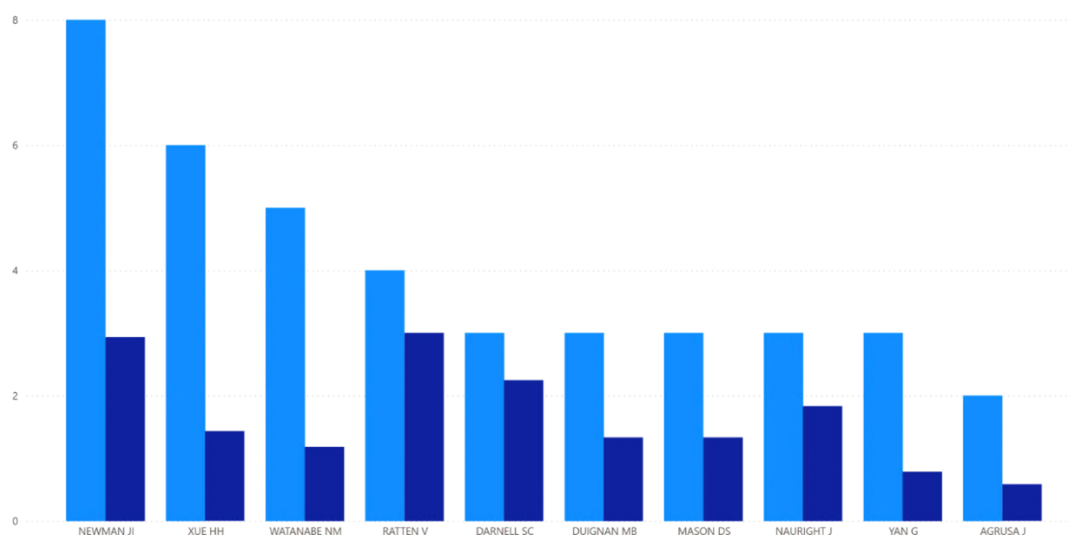


Figure 2. The top ten most prominent authors in the sports and economics research

The scholarly significance of researchers within the sports and economics discipline, particularly Newman, Xue, and Watanabe, is further underscored in figure 2. This table serves as a comprehensive repository, capturing the collective expertise and noteworthy contributions of these scholars alongside their esteemed peers, including Ratten, Darnell, Duignan, Mason, Nauright, Yan, and Agrusa.

Within the context of this table, readers can explore a detailed overview of the academic landscape shaped by these influential figures. Their contributions, marked by profound insights and nuanced perspectives, play a pivotal role in advancing our understanding of the complex relationship between sports and economics. Researchers and academicians interested in gobtaining a holistic perspective on this interdisciplinary field is encouraged to consult figure 2, which encapsulates the substantial body of work generated by these eminent scholars.

Table 1. Top 10 most cited in the sports and economics reseach

Paper	Total Citations	TC per Year
Coalter, F. (2010). The politics of sport for development: Limited focus programmes and broad gauge problems?. <i>International review for the sociology of sport</i> , 45(3), 295-314.	343	22.86
Brown, D. (2005). An economy of gendered practices? Learning to teach physical education from the perspective of Pierre Bourdieu's embodied sociology. In <i>Sport, Education and Society</i> , 10 (1), 3-23.	120	6
Herm, S., Callsen-Bracker, H. M., & Kreis, H. (2014). When the crowd evaluates soccer players' market values: Accuracy and evaluation attributes of an online community. <i>Sport Management Review</i> , 17(4), 484-492.	77	7
Ratten, V. (2020). Coronavirus disease (COVID-19) and sport entrepreneurship. <i>International Journal of Entrepreneurial Behavior & Research</i> , 26(6), 1379-1388.	70	14
Taylor, M. (2006). Global players? Football, migration and globalization, c. 1930-2000. <i>Historical Social Research/Historische Sozialforschung</i> , 7-30.	70	3.68
Ratten, V., & Ratten, H. (2011). International sport marketing: practical and future research implications. <i>Journal of Business & Industrial Marketing</i> , 26(8), 614-620.	60	4.28
Van Bottenburg, M., & Salome, L. (2010). The indoorisation of outdoor sports: An exploration of the rise of lifestyle sports in artificial settings. <i>Leisure studies</i> , 29(2), 143-160.	60	4
Hutchins, B., Li, B., & Rowe, D. (2019). Over the top sport: live streaming services, changing coverage rights markets and the growth of media sport portals. <i>Media, Culture & Society</i> , 41(7), 975-994.	58	9.66
Evans, J., & Davies, B. (2014). Physical education PLC: Neoliberalism, curriculum and governance. <i>New directions for PESP research. Sport, Education and Society</i> , 19(7), 869-884.	56	5.09
Giampiccoli, A., Lee, S. S., & Nauright, J. (2015). Destination South Africa: Comparing global sports mega-events and recurring localised sports events in South Africa for tourism and economic development. <i>Current issues in tourism</i> , 18(3), 229-248.	54	5.4

A thorough examination of the table 1, which meticulously curates highly cited papers at the intersection of sports and the economy, provides insight into the multifaceted scholarly landscape. Within this corpus, Coalter's (2010) groundbreaking investigation into the politics of sport-for-development stands out prominently, not only due to its remarkable 343 citations but also due to its profound influence on academic discourse. Beyond being a quantitative metric, this work occupies a central position in scholarly dialog, elucidating the enduring scholarly commitment to unraveling the intricate dynamics and limitations associated with employing sports as a catalyst for societal development. In parallel, Brown's (2005) inquiry, situated within the theoretical framework of Pierre Bourdieu's embodied sociology, offers a discerning analysis of the economy of gendered practices within the context of learning to teach physical education. With a total of 120 citations, this work transcends disciplinary boundaries, contributing to gender studies, education, and sports. Despite its publication in 2005, its ongoing influence underscores the sustained importance of understanding the gendered dimensions inherent in pedagogical practices within physical education. Expanding the discourse, Herm, Callsen-Bracker, and Kreis's (2014) study delves into the precision of online community evaluations regarding soccer players' market value. With 77 citations, this work underscores the burgeoning significance of digital communities in shaping sports analysis and decision-making processes. The examination of evaluation attributes within the digital sphere serves as a reflective lens for the evolving landscape of technology-driven methodologies in the assessment of sports performance. Addressing pressing contemporary concerns, Ratten's (2020) investigation into the ramifications of the COVID-19 pandemic on sport entrepreneurship has swiftly garnered scholarly attention, accumulating 70 citations. This underscores the field's adaptability in responding to current challenges and accentuates the imperative of scrutinizing the dynamic interplay between sports and entrepreneurship amidst global crises. The rapid citation rate serves as an indicator of its immediate recognition and relevance within the scholarly community. Against the backdrop of temporal considerations, Taylor's (2006) exploration of football, migration, and globalization from 1930-2000, published in 2006, maintains its scholarly impact with 70 citations. This historical perspective provides a nuanced and critical lens for comprehending the global dimensions of football and migration, positioning it as a lasting reference within the broader discourse of sports and globalization.

In essence, this examination of highly cited papers within the realm of sports and the economy not only provides quantitative insights into their impact but also unveils the nuanced and evolving nature of scholarly discourse. Each paper discussed contributes to shaping conversations within

the dynamic and multifaceted field of sports and the economy, serving as pivotal milestones in the ongoing academic exploration of these intersecting domains.

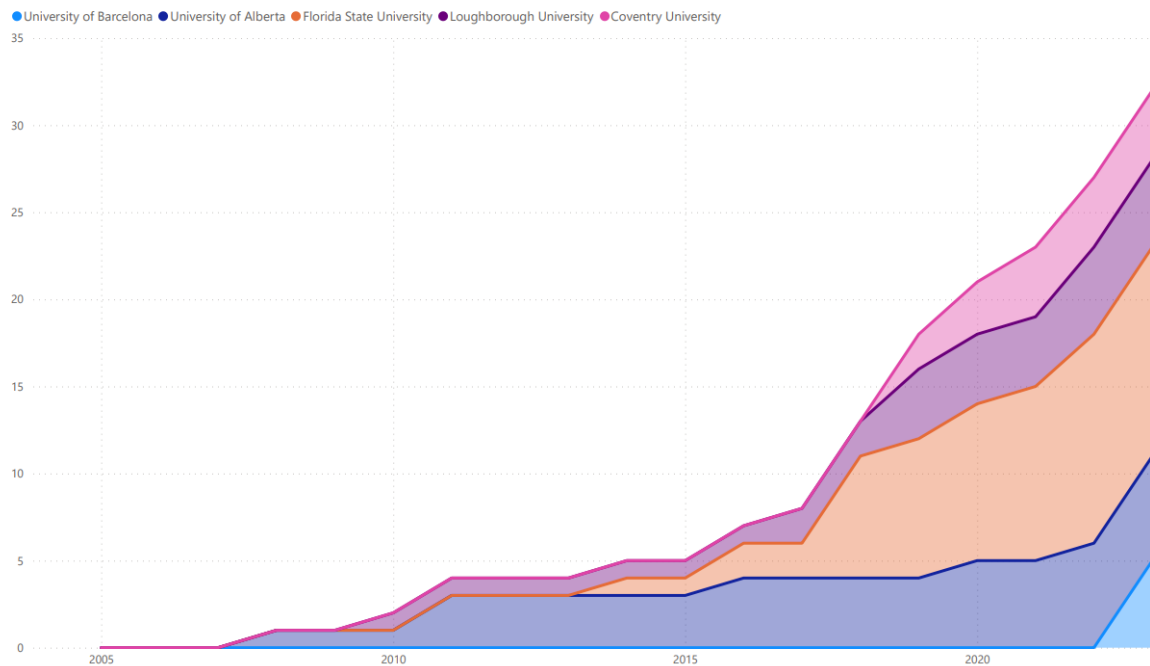


Figure 3. Productivity trends of affiliations over time in the sports and economics research

The comprehensive examination of affiliations in article production over time within the interdisciplinary domain of sport and economy unveils a rich tapestry of intricate patterns and notable trends. In Figure 3, the focused analysis of specific academic institutions serves as a lens through which we can gain deeper insights into the nuanced evolution of their academic contributions. Initiating the scrutiny with the University of Alberta, a discernible surge in article production became evident in 2008, breaking a prior period with no recorded articles. This evolution culminates in a notable peak of six articles in both 2022 and 2023. The discernible upward trajectory signifies a growing scholarly engagement from the University of Alberta in exploring the intersection of sports and the economy, marking a substantive evolution in their overall research output over the years. Shifting the lens to Loughborough University, a distinctive inflection point emerged in 2017. Here, the annual production transitions from a consistent output of one article per year to a notable increase, reaching five articles in both 2022 and 2023. This surge suggests an intensified scholarly output in recent years, indicative of a heightened emphasis on the complex dynamics between sports and the economy within Loughborough University's academic pursuits. In contrast, the trajectory of Florida State University's evolution is characterized by dynamic growth, evolving from a modest one article in 2014 to a substantial twelve articles in both 2022 and 2023. This significant amplification underscores a noteworthy

expansion in research output, pointing to an escalating scholarly focus on the intricate interplay between sports and the economy at Florida State University. Conversely, Coventry University, after a period of no recorded articles, initiated a gradual but consistent rise from 2019 onward, culminating in four articles in 2023. This persistent increase may indicate an emergent scholarly interest or a deliberate strategic shift in research priorities within Coventry University, specifically concerning the intersection of sports and the economy.

Finally, the University of Barcelona, although lacking recorded articles until 2023, experienced a sudden surge, yielding five articles in that year alone. This abrupt increase suggests a recent scholarly endeavor or the establishment of a new research focus within the University of Barcelona, marking a noteworthy development in their contributions to the domain of sports and the economy.

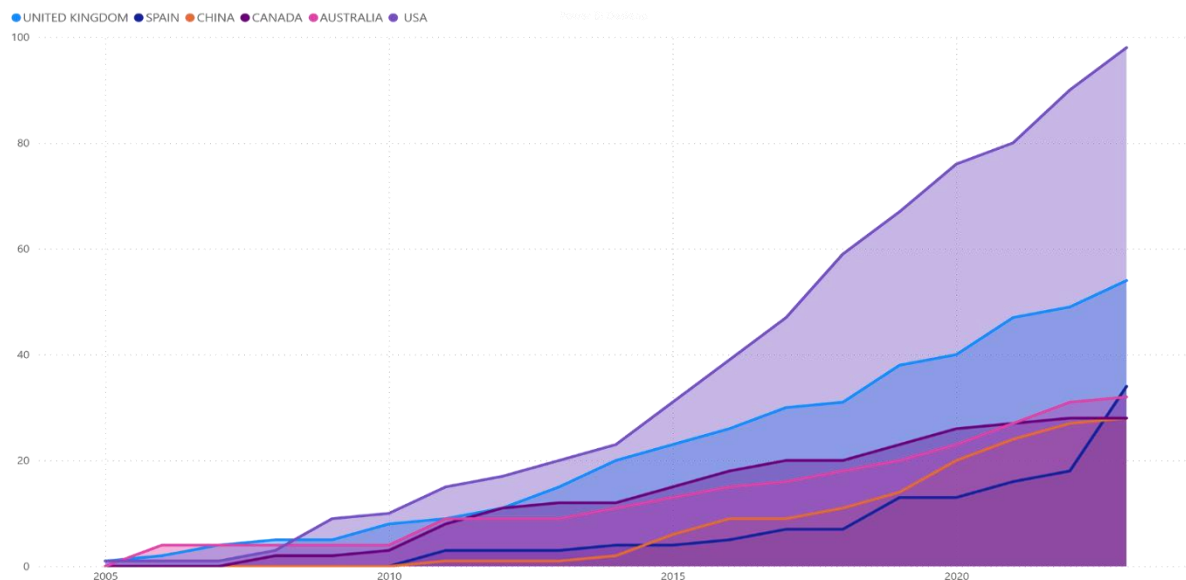


Figure 4. Productivity trends of prominent countries over time in the sports and economics research

Figure 4 provides an in-depth examination of article production in the field of sports and economics across various countries over time, uncovering nuanced patterns and offering valuable perspectives on the evolving academic landscape. This analysis provides an in-depth understanding of the distinct trajectories each nation follows, contributing to the global discourse on the intersection of sports and the economy. Beginning with the United Kingdom, a discernible trajectory emerges, showcasing a steady ascent in article production from 2005 onward. With a consistent upward trend, the number of publications in the United Kingdom will increase substantially, reaching 54 articles in 2023. This progressive growth underscores the sustained

scholarly interest and prolific research output within the British academic landscape in the realm of sports and the economy. Similarly, the United States presents a parallel narrative, reflecting a dynamic evolution in article production. Commencing with a modest single article in 2005, the United States experienced a significant surge over the years, culminating in 98 articles in 2023. This remarkable growth signifies the robust and expansive research contributions emanating from academic institutions in the United States, reaffirming its pivotal role in shaping the discourse on sports and the economy. Turning our attention to Australia, a noteworthy trajectory reveals a gradual yet consistent increase in article production. Commencing with no recorded articles in 2005, Australia steadily climbed to 32 articles in 2023. This evolution suggests a growing scholarly presence and an expanding focus on the intersection of sports and the economy within Australian academic circles. Canada, also exhibited a discernible upward trend in article production. Beginning in 2005, Canada experienced a gradual increase in the number of recorded articles, reaching 28 articles in 2023. This evolving landscape indicates mounting scholarly interest and a steady expansion of research initiatives within Canadian academic institutions. Shifting our focus to China, a distinctive pattern characterized by relatively recent but rapid growth in article production emerged. Since there were no recorded articles in the early years, China's scholarly contributions will increase, reaching 28 articles in 2023. This accelerated rise underscores China's increasing prominence in the global discourse on sports and the economy. Last, Spain presents an intriguing trajectory, marked by a relatively slower but steady increase in article production. From three articles in 2011, Spain will reach 34 articles in 2023. This evolving landscape points to a growing scholarly engagement and a deepening focus on the intersection of sports and the economy within Spanish academic circles.

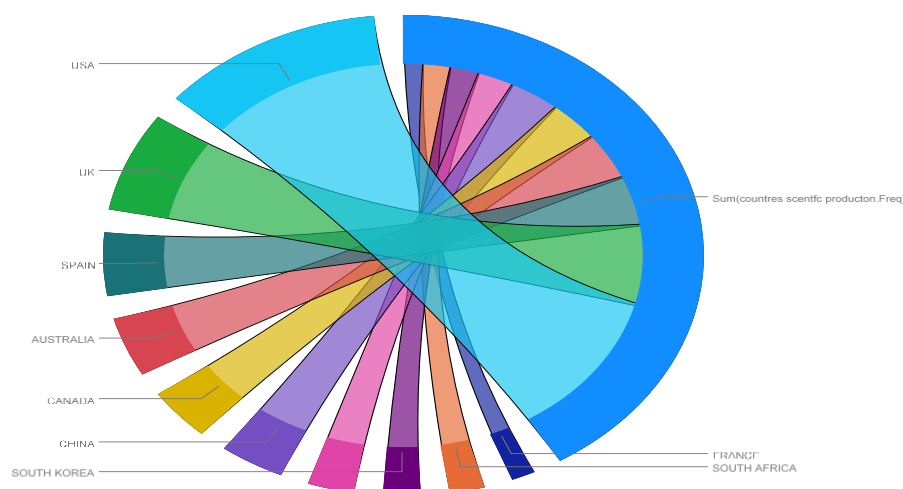


Figure 5. Chord diagram: Research country strengths by publication ranking

Embarking on an exploration of the intricate landscape of cumulative article production within the interdisciplinary realm of sport and the economy unveils a nuanced narrative, shedding light on each nation's unique contributions and their roles within the global scholarly discourse. This thorough analysis not only elucidates the variations in scholarly engagement but also highlights the distinctive positions these countries occupy in advancing research within this dynamic and evolving field. Figure 5 highlights the United States as a dominant contributor, with a total of 98 articles in the field. This extensive output not only cements the United States' pivotal role in shaping the discourse on the intricate relationship between sports and the economy but also positions it as a leading force, making indispensable contributions to the ongoing scholarly narrative. Closely following, the United Kingdom secures a prominent standing with 54 articles, indicative of sustained and noteworthy scholarly engagement. The robust output from the United Kingdom underscores its unwavering commitment to advancing research at the intersection of sports and the economy, establishing it as a key participant enriching the global dialog with diverse perspectives within esteemed journals. Spain, with 34 commendable articles, has emerged as a growing force in the field. The evolving scholarly landscape in Spain signifies an increasing dedication to understanding the complex dynamics of sports and the economy. This upward trajectory positions Spain as an emerging and influential contributor, adding depth and diversity to the ongoing academic discussions within esteemed journals. Australia, with 32 articles, maintains a consistent and expanding presence in the literature. The growing contribution from Australia reflects a deepening focus on the interdisciplinary nature of sports and the economy, positioning it as a valuable participant in global scholarly dialog. Australia's research output signifies its role in contributing unique insights to the ongoing discourse within reputable academic journals. Canada, contributing 28 articles, showcases an upward trajectory in research output. The evolving scholarly landscape in Canada suggests a mounting interest and commitment to exploring the intricate connections between sports and the economy, positioning the nation as a significant player in top-tier academic journals and offering valuable insights to the global scholarly community. China, which also contributed 28 articles, experienced a rapid increase in scholarly engagement. The nation's accelerated growth underscores its increasing prominence in the global discourse on sports and the economy, enriching the literature with unique insights and diverse perspectives, and marking its noteworthy presence in top academic journals. Germany, South Korea, and South Africa, with 20, 16, and 15 articles, respectively, carve out distinctive spaces in the scholarly landscape. These nations contribute significantly to the global dialog, adding diverse perspectives and enriching the academic discourse on sports

and the economy with their unique insights into top-tier academic journals. France, while contributing 10 articles, occupies a notable position, making valuable and nuanced contributions to the literature. Although the quantity may be smaller in comparison, France's scholarly endeavors add depth and nuance to the overarching discourse on sports and the economy, reflecting the quality and impact of its contributions within esteemed academic journals.

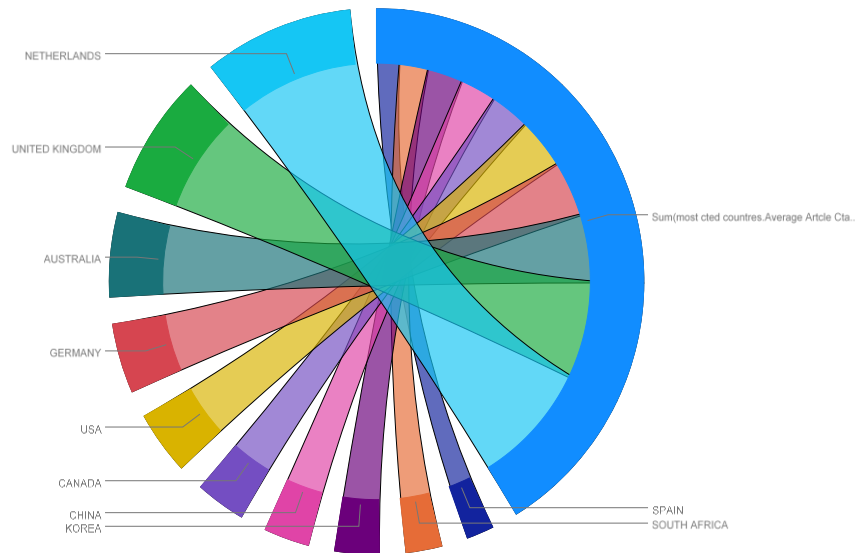


Figure 6. Chord diagram: Research country strengths by average citation

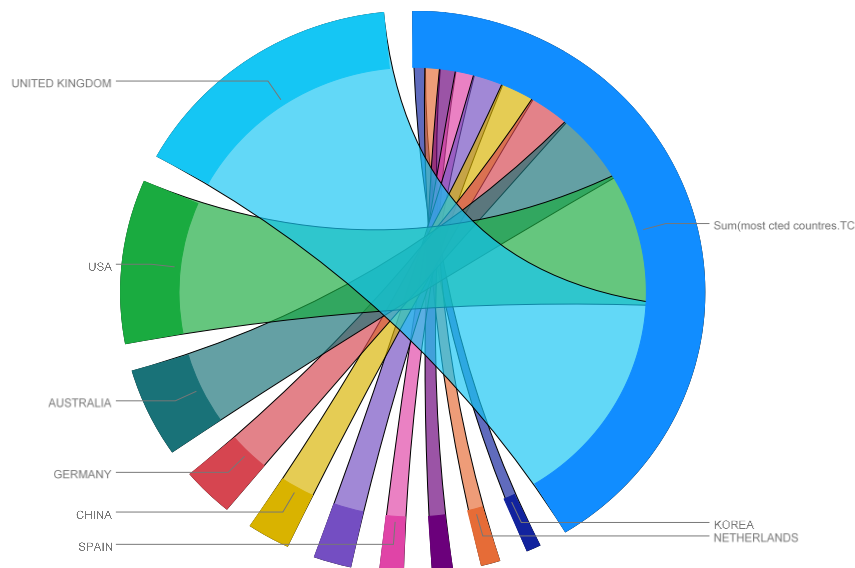


Figure 7. Chord diagram: Research country strengths by total citation ranking

Figure 6 and figure 7 examines the complex dynamics of countries' contributions within the interdisciplinary field of sports and economics. By analyzing the evolving trajectories of total

citations (TCs) and average article citations, it reveals a nuanced narrative of academic development. Examining the leading contributors provides valuable insights into the shifting emphasis on quantity, quality, or a strategic balance between the two over time. The United Kingdom, an enduring academic powerhouse, not only exhibits a sustained commitment to scholarly output but also showcases a strategic balance between prolific production and impactful research. The gradual increase in total citations to 1108 signifies a continued influence, complemented by the notable average article citation of 29.2, emphasizing the enduring impact and caliber of individual contributions. This trajectory reinforces the United Kingdom's pivotal role in shaping the academic discourse, maintaining a harmonious equilibrium between quantity and quality. Similarly, the United States, with its formidable total citation count of 676, demonstrates a strategic shift in scholarly emphasis. A consistent upward trend in total citations indicates an enduring scholarly influence, while a stable average article citation of 15.4 suggests a deliberate focus on maintaining the quality and impact of individual contributions. This strategic equilibrium signifies a nuanced approach to scholarly output, reflecting a thoughtful evolution over time. Australia, as a significant contributor, underwent a dynamic evolution marked by a steady increase in total citations to 367. Simultaneously, the substantial increase in average article citations to 20.4 signals a strategic shift toward producing research with lasting influence. This maturation in scholarly contributions positions Australia as a key player in the academic dialog, reflecting an intentional blend of quantity and enduring impact. Germany, with a total citation count of 203 and an average number of article citations of 16.9, maintains a balanced trajectory, demonstrating a consistent commitment to both quantity and quality. Each article contributes meaningfully to the evolving discourse, highlighting Germany's sustained scholarly impact and a harmonious blend of scholarly endeavors. China, characterized by a considerable total citation count of 168, signifies a transformative shift in scholarly focus. The increasing average article citation of 11.2 suggests a growing emphasis on producing research with enduring value, showcasing China's evolving influence in shaping the academic narrative. This nuanced approach aligns with China's expanding role in scholarly discourse, indicating a thoughtful evolution over time. Canada, strategically positioned with a total citation count of 148 and an average article citation of 12.3, experiences a measured evolution. The gradual increase in both total and average citations reflect a maturing scholarly presence, emphasizing both the quantity and enduring impact of contributions. This strategic balance positions Canada as a significant contributor to the evolving academic landscape, showcasing an intentional and thoughtful progression. Spain, with a total citation count of 94 and an average article citation of

6.7, illustrates a nuanced and diversified scholarly approach. The moderate increase in total citations, coupled with a stable average article citation, suggests a deliberate evolution in contributing diverse insights to the academic dialog. Spain's scholarly trajectory reflects a nuanced and deliberate approach, emphasizing the thoughtful evolution of its scholarly contributions. South Africa, with a total citation count of 80 and an average number of article citations of 8.9, shows consistent scholarly evolution. The balanced trajectory underscores sustained scholarly impact, with each article contributing meaningfully to the academic dialog. South Africa's role in contributing to the evolving discourse is marked by a measured and steady progression, reflecting a thoughtful and intentional scholarly trajectory. Despite having a comparatively lower total citation count of 74, the Netherlands has experienced a notable shift in emphasis. The exceptional rise in average article citations to 37 underscores a deliberate focus on producing highly impactful research. This unique emphasis positions the Netherlands as a key contributor, demonstrating that quality supersedes quantity in scholarly contributions, indicating an intentional and thoughtful progression. Korea, with a total citation count of 55 and an average article citation of 11, reflects a measured scholarly evolution. The balanced trajectory indicates Korea's commitment to contributing valuable insights and perspectives within the interdisciplinary field of sports and the economy. This balanced approach underscores Korea's significance in the evolving academic discourse, reflecting a thoughtful and intentional evolution over time.

The juxtaposition of total citations (TCs) and average article citations within each country's scholarly trajectory provides a compelling lens through which to discern the multifaceted nature of their academic contributions. Total citations illuminate the cumulative impact of a country's research output, underscoring its overall influence on the academic landscape. On the other hand, average article citations provide a more nuanced perspective, gauging the quality and impact of individual contributions on average. This distinction is pivotal because it enables a comprehensive understanding of a country's scholarly approach – whether it leans toward prolific output, impactful individual contributions, or a strategic balance between the two.

Highlighting both total and average citations is essential for a holistic evaluation of a country's standing in the field of sport and economy. A higher total citation count may signify a prolific research output, demonstrating the breadth of a country's engagement in the scholarly discourse. Conversely, a substantial average article citation indicates a focus on producing impactful research, emphasizing the depth and lasting influence of individual contributions. The synergy

between these two metrics provides a nuanced narrative, allowing for a more informed interpretation of a country's scholarly landscape. It also facilitates comparisons across nations, shedding light on the diverse approaches adopted by different countries in contributing to evolving academic dialog.

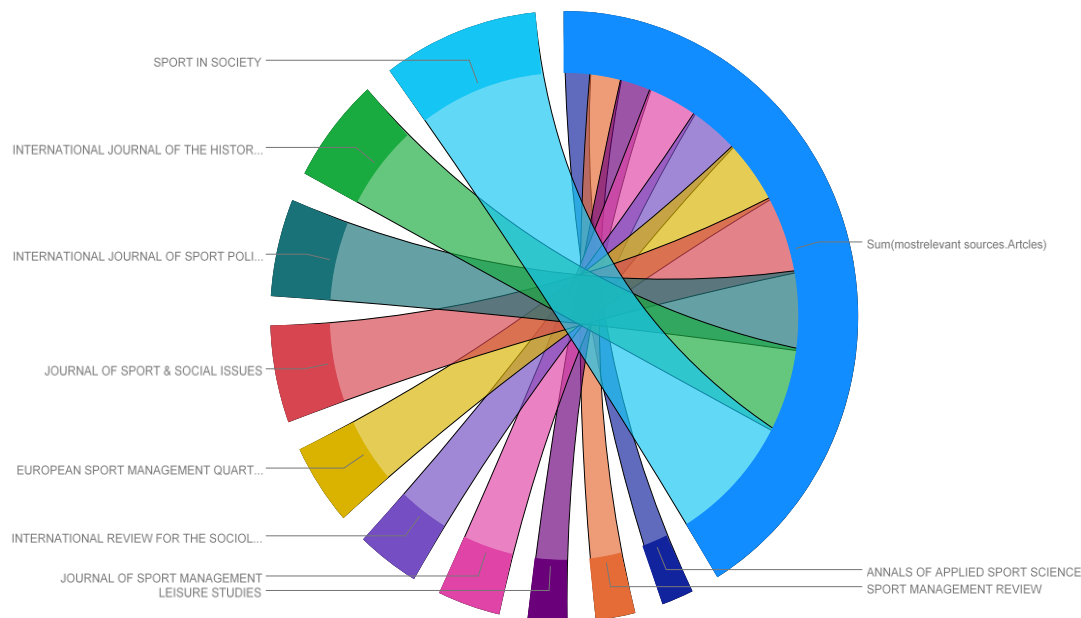


Figure 8. Chord diagram: Research country strengths by publication ranking

The discovery of the most relevant sources in the interdisciplinary field of sports and economics highlights the key resources that significantly contribute to academic discourse, as illustrated in Figure 8. Foremost among these is "Sport in Society," a prominent source with a substantial 20 articles. This journal serves as a foundational cornerstone, providing scholars with a diverse array of perspectives and fostering comprehensive discussions on the intricate intersections of sports within societal contexts. The "International Journal of the History of Sport" is the next most common, with 13 articles. This source underscores the importance of historical perspectives in comprehending the evolution of sports and its intricate relationship with economic dynamics. As a vital repository, it offers researchers an invaluable platform to delve into the historical dimensions shaping contemporary sports phenomena. Turning to the critical nexus between sports, policy, and politics, both the "International Journal of Sport Policy and Politics" and the "Journal of Sport & Social Issues" make substantial contributions with 12 articles each. These sources play a pivotal role in elucidating the sociopolitical dimensions of sports, providing researchers with a comprehensive view of policy frameworks and social issues that mold the economic contours of the sports industry. In the European context, the "European

Sport Management Quarterly" takes center stage with 10 articles. This source serves as a scholarly hub, offering insights into the nuanced management aspects of sports within Europe. Researchers have found a dedicated platform to explore the intricate challenges and opportunities in sports management with a regional focus. Moving forward, both the "International Review for the Sociology of Sport" and the "Journal of Sport Management" presented 8 articles each. These sources contribute significantly to the sociological and managerial facets of sports, fostering a deeper understanding of areas such as sociological underpinnings and strategic management approaches that influence the economic dynamics of the sports industry. In the realm of leisure and management dimensions within the sports domain, "Leisure Studies" and "Sport Management Review" each provided 5 articles. These sources enrich scholarly comprehension by offering insights into the broader leisure aspects and specific management dimensions influencing the economic facets of sports. Finally, the "Annals of Applied Sport Science," with 4 articles, focuses on the practical and applied dimensions of sports science within the broader context of sports and the economy. This source is a valuable repository for researchers investigating the applied sciences that drive advancements in sports and their economic implications.

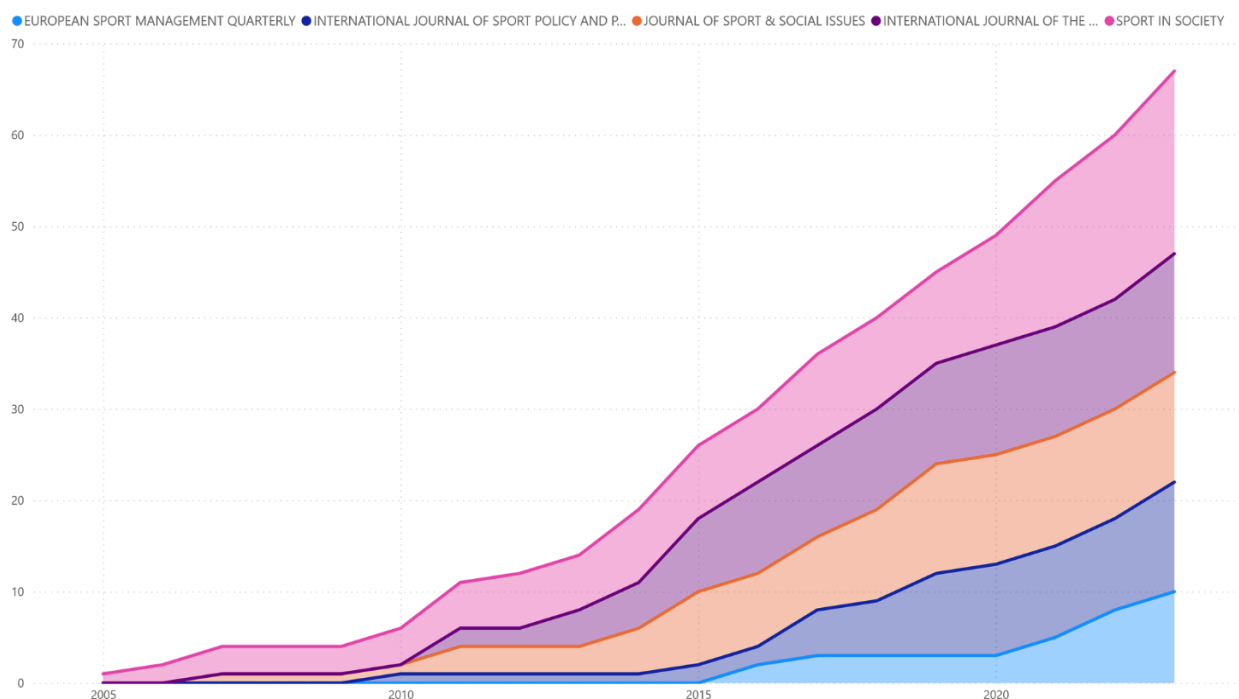


Figure 9. Prominent journals' productivity trends over time in the sports and economics research

The temporal evolution of academic production in foundational sources within the interdisciplinary field of sports and economics is depicted in Figure 9, reflecting the dynamic

structure of academic discourse and its shifting contours over the years. Commencing in 2005, "Sport in Society" initiated with a single article, laying the foundation for subsequent growth. In the following years, its trajectory steadily increased, reaching 20 articles by 2023. This consistent upward trend underscores the enduring significance and sustained scholarly engagement with societal intersections of sports. Simultaneously, the "International Journal of the History of Sport" commenced in 2006, with its output gradually increasing to 13 articles by 2023. This source, dedicated to unraveling the historical dimensions of sports, demonstrates a continual commitment to enriching the understanding of sports within historical contexts. The "International Journal of Sport Policy and Politics," "Journal of Sport & Social Issues," and "European Sport Management Quarterly" embarked on their scholarly journeys in 2010. Over time, these sources exhibited diverse growth patterns. While the former two sources reached 12 articles each by 2023, reflecting a consistent production pace, the latter experienced a notable ascent, culminating in 10 articles, attesting to its increasing prominence within the European sports management discourse. The year 2015 marked a pivotal juncture, witnessing an acceleration in production for several sources. Both "Sport in Society" and the "International Journal of the History of Sport" doubled their output by 2023, signifying an intensified scholarly focus. Notably, "European Sport Management Quarterly" experienced a significant increase, introducing 8 articles into the academic arena. As we approach 2023, a discernible pattern emerges, indicating a maturation of scholarly output across all sources. "Sport in Society" and the "International Journal of the History of Sport" continue their upward trajectories, reaching 20 and 13 articles, respectively. The "International Journal of Sport Policy and Politics" and the "Journal of Sport & Social Issues" maintain their steady growth, capping 12 articles each. Meanwhile, "European Sport Management Quarterly" has experienced substantial expansion, culminating in 10 articles, emblematic of its growing influence within the European sports management domain.

CONCLUSION

Bibliometric analysis is a foundational methodological approach essential for comprehensively assessing and quantifying scholarly literature, particularly within interdisciplinary domains such as the intersection of economics and sport. This paper embarks on a rigorous examination of the literature within this sphere, employing bibliometric tools to uncover nuanced trends and patterns over time. One striking observation revealed by this analysis is the discernible upward trajectory in scholarly output over the years, indicating a growing interest and engagement with the economic dimensions of sport. However, amidst this overall

upward trend, fluctuations are discernible, perhaps reflecting the evolving nature of research interests, methodological approaches, or external factors influencing scholarly production. Furthermore, the breadth and depth of topics covered within this interdisciplinary field are notable. Scholars have explored a myriad of themes, ranging from the traditional economic analysis of sports markets and industries to more contemporary issues such as the intersection of sport with politics, gender dynamics, the burgeoning influence of online gaming, the unprecedented challenges posed by the COVID-19 pandemic, and the socioeconomic impacts of mega sporting events. Such diversity underscores the multifaceted nature of the relationship between economics and sport, inviting interdisciplinary inquiry and collaboration. A closer examination of the geographical distribution of scholarly contributions reveals both patterns of concentration and dispersion. While countries such as the USA, the UK, Spain, and Australia emerge as primary contributors, indicative of established research hubs within the Western academic landscape, it is noteworthy that the top ten most prolific countries extend beyond these traditional boundaries. Nations such as China, South Africa, and South Korea feature prominently, highlighting the global reach and engagement with the economics of sport across diverse sociocultural contexts. In addition to geographical patterns, the disciplinary origins of influential publications within this domain merit attention. Despite the interdisciplinary nature of the subject matter, a significant portion of seminal works emanate from within the realm of sports disciplines. This disciplinary bias underscores the predominant perspective through which the intersection of economics and sport is approached, potentially influencing research agendas, theoretical frameworks, and methodological choices. Nevertheless, despite burgeoning scholarship and interdisciplinary engagement, inherent limitations persist. The nascent state of development of this field poses challenges, ranging from theoretical fragmentation to methodological inconsistencies and epistemological tensions.

Based on the results obtained, advancements in technology and easier access to scientific knowledge have significantly enhanced the quality of research. Accordingly, studies focusing on football, market values, and the economic implications of COVID-19 within the context of sports and economic development demonstrate a substantial impact, further supporting the research. Moreover, the primary factor driving the increase in scientific output can be identified as economic development and growth. Governments utilize sports not only to promote public health but also as a tool for visibility and economic progress. The scientific prominence of the United Kingdom and the USA brings their sports systems to the forefront. Additionally, their leading

positions in Olympic rankings can be attributed to their economic structures, sports infrastructures, and advancements in sports science.

As such, this study sets its research period from 2005 to 2023, a deliberate choice aimed at capturing a comprehensive overview of the literature within this timeframe while acknowledging the need for future research to address evolving trends and emerging issues. It is important to note, however, that the exclusion of publications beyond 2023 represents a notable limitation of this study, necessitating ongoing scholarly inquiry to incorporate the latest developments and advancements within this rapidly evolving field. Future research endeavors should thus endeavor to bridge disciplinary divides, foster interdisciplinary dialog, and leverage innovative methodological approaches to further enrich our understanding of the intricate nexus between economics and sport.

Ethics Statement

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

Author Contributions

All authors contributed equally to the manuscript's conceptualization, editing, and finalization and are worthy of their inclusion as authors. The aspects of the study handled by each author are as follows: (a) M.A.: conceptualized the overall study scope and design, extracted the results; (b) Y.S.: prepared the methodology, conducted the analyses and extracted the results; The manuscript has been revised by all the authors in accordance with the feedback from the reviewers. All authors participated in drafting the manuscript and endorsed the final version.

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