BIBLIOMETRIC INSIGHTS INTO SPORTS MANAGEMENT RESEARCH AMONG STUDENTS: CURRENT TRENDS

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Abstract. Sports management among students in education has experienced rapid growth in its implementation. This article presents the current research trends on sport management in student research, through a bibliometric analysis of publication data from the top ten sport management. By reviewing 1260 articles from 2014 to 2024, this study examines the trends and progress in student sport management through bibliometric analysis. The purpose of this study is to understand the trends, focus and contribution of research in this field. Data were retrieved through Scopus and analyzed using bibliometric analysis, which reviews scientific publications related to student sport management. The VOSviewer tool was used to provide a visualization of the network collaboration between researchers, institutions and research subjects, which provides deeper insight into the information structure and dynamics of the field. This approach reveals long-term research trends, identifies key topics and highlights the contributions of institutions and key researchers. This study highlights the importance of ongoing research and collaboration in the development of sport management in students. In addition, a systematic observation of the literature was conducted to map potential future research directions based on current trends

Keywords: Sports Management, Student Research, Bibliometric Analysis, Research Trends, Sport Management Trends, Student Sports, VOSviewer Tool.

I. INTRODUCTION

Sports Management in Student is referred to running sports organizations, events, and activities especially designed for students is known as "sport management in students." Programs in sport management have expanded to give students the skills necessary for a variety of positions in the sports sector as institutions come to understand the value of sports in their communities (Hammerschmidt et al., 2024). Important topics including sports marketing, event planning, facility administration, and the financial side of sports organizations are usually covered in these programs. Students have practical experience and deepen their comprehension of the intricacies involved in managing sports teams and organizations by participating in internships, workshops, and networking events (Danylchuk et al., 2015) . Sport management can be defined as the organization and management of resources to achieve goals in the field of sport

(Hemmonsbey et al., 2021). Planning events, managing facilities, marketing, and creating sport programs are just a few of the many tasks involved. The primary goal of sport management in a student environment is to use participation in sport and physical activity to foster positive social and academic influences (Pellegrini et al., 2020).

As research in sports management continues to evolve, it becomes crucial to track how academic contributions in this area have developed over time (Lis & Tomanek, 2020). With the ever-increasing number of studies being published in this field, it is necessary to systematically analyze the research trends to provide a clearer picture of its progression. Bibliometric analysis, a quantitative research method that measures the impact and patterns of scientific literature, offers an effective way to achieve this goal (Manoj Kumar L et al., 2023; Passas, 2024). By utilizing bibliometric techniques, researchers can uncover key insights into the most influential studies, authors, institutions, and journals in sports
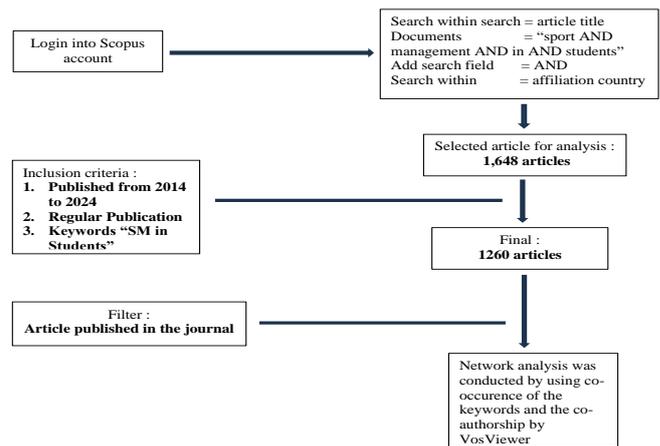
management (Baier-Fuentes et al., 2020). This method also allows for the identification of emerging themes and popular research areas, offering valuable information to academics and practitioners alike about where future research in sports management is heading (Apriady H et al., 2024; Fitri et al., 2022). Several methodologies, including literature reviews, meta-analyses, and bibliometric methods, have already been used to assess the prevalent patterns in the sport management literature (Guidotti et al., 2023). Since sport management has evolved into an academic field, it must update its courses of study and clearly define its core knowledge in order to supply administrators and sport managers, particularly in educational environments, is required business and administrative knowledge, competencies, and skills (Guidotti et al., 2023). Student competency is one of the most desired outcomes of sport management in education, since it provides students with the skills and information they need to succeed in the sports sector. Furthermore, it promotes leadership, strategic thinking, and collaborative abilities, self management, which are critical for adjusting to the dynamic character of sports administration and effectively contributing to the field's growth and professionalization (Fitri et al., 2020; Keiper et al., 2019).

The bibliometric approach does more than just provide a snapshot of past research, it enables the identification of knowledge gaps and underexplored similar topics within the existing literature (Thomson et al., 2019). In addition to tracking publication trends, bibliometric analysis reveals collaboration networks among scholars, shedding light on who the key contributors are and how they are connected.(Lim & Kumar, 2024). This study's main goal is to perform a bibliometric analysis of studies conducted between 2014 and 2024 on sport management in student and related subjects. This study intends to identify outstanding publications, top authors, influential journals, and active countries in this subject, analyze patterns of publication and citation growth and investigate the network of occurrences including keywords chosen by the authors . Researchers and readers can track the growth and development of physical education-related topics and gain insight into new and developing fields of study from these findings. With help of VOSviewer, a program for analyzing and visualizing bibliometric data (Martins et al., 2024)

II. METHODS

We started our research by collecting a significant volume of literature about physical education in schools for people with disabilities using bibliometric analysis. Similar to systematic literature reviews, bibliometric analysis is a useful method for mapping large amounts of scholarly literature, guaranteeing the caliber and correctness of the data used and the results generated (Pessin et al., 2022). By using this method, researchers can discover trends, patterns, and connections among previous studies as well as have a thorough grasp of the information landscape in this particular field (Donthu et al., 2021). Researchers can uncover underlying linkages between authors, countries, and research topics by using bibliometric analysis to examine collaborative

networks among these entities. We used Elsevier's Scopus database as the main source for bibliographic research on sports management in students. This required a thorough background investigation that spanned over a decade, from 2014 to 2024, and included about 1260 articles. On October 24, 2024, we searched the Scopus database in an effort to compile journals and articles. We performed a bibliometric study focused on similarity visualization techniques in a bibliographic repository that included more than 2000 diverse disciplines. We explored the body of existing literature by examining bibliographic information taken from a variety of papers in this topic using a scientific mapping approach (Andersen, 2021)
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Fig. 1. Document Article Filtering Process in Scopus

We focused on the subject of sports management and students in order to increase the relevancy of our data. Citations, bibliographic information, abstracts, keywords, findings, and other pertinent material were extracted. We applied filters that were in line with the methods of sports management in students, and we used terms like "Sport Management" and "Students". Because broad searches may overlook studies that are expressly connected, we focused only on article titles to ensure that topics that are directly relevant are included. Below is a list of the precise terms we used in our search.

TITLE-ABS-KEY (sport AND management AND in AND students) AND PUBYEAR > 2013 AND PUBYEAR < 2025 AND (LIMIT-TO (DOCTYPE , "ar")) AND (LIMIT-TO (SRCTYPE , "j")) AND (LIMIT-TO (LANGUAGE , "English"))
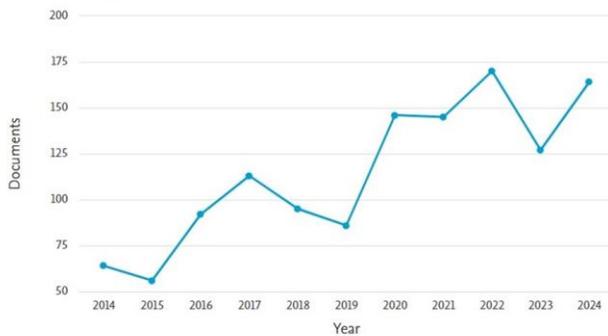
III. RESULTS

1) Document Published

The researchers from 102 nations have written articles about sports management in students between 2014 and 2024. Figure 2. shows the overall publication trend in student sport management from 2014 to 2024. According to an analysis using the Scopus database, 64 articles were published in 2014.

The quantity of published articles dropped to 56 in 2015. The number of published articles increased significantly to 92 in 2016 and 113 in 2017. However, the number of publications decreased once more in 2018 and 2019, hitting 95 and 86 respectively, before rising once more in 2020 to 146. There were 145 articles in 2021, a little decrease from the previous year. With 170 articles, the most rising trend persisted in 2022. In 2023, it fell once more to 127, and in 2024, it grew a little to 166. As a result, publications in 2022 and 2024 increased significantly, suggesting that students are becoming more interested in sports management in students.

Fig. 2. Document Published on Scopus Databased

The top ten most impactful and influential articles on student sports management are shown in Table 1. Article that written by Frank et al., which has 283 citations overall, comes in top. The article by Broglio et al., which has 251 citations, comes in at number two. The Morton et al. piece, which has 208 citations, comes in third place. With 150 citations overall, the Tenforde et al. publication comes in at number four. With 130 citations, Wasserman et al.'s publications came in fifth place, while Herman, Hailemeskel Demissie and Assefa, Sotiriadou, Radu, and Watling, in descending order, had fewer than 150 citations overall. This table contains information about the most influential authors and sheds light on the significant research contributions made by different writers by compiling the most important works and their corresponding citation counts in the subject of Sports Management In Students.

No	Document title	Authors and Year	Citations Total
	Members: The NCAA–DoD Concussion Assessment, Research and Education (CARE) Consortium Structure and Methods		
3	The school environment and adolescent physical activity and sedentary behaviour: A mixed-studies systematic review	(Morton et al., 2016)	208
4	Association of the Female Athlete Triad Risk Assessment Stratification to the Development of Bone Stress Injuries in Collegiate Athletes	(Tenforde et al., 2017)	150
5	Epidemiology of Sports-Related Concussions in National Collegiate Athletic Association Athletes from 2009-2010 to 2013-2014	(Wasserman et al., 2016)	138
6	Concussion May Increase the Risk of Subsequent Lower Extremity Musculoskeletal Injury in Collegiate Athletes	(Herman et al., 2017)	127
7	Primary dysmenorrhea magnitude, associated risk factors, and its effect on academic performance: Evidence from female university students in Ethiopia	(Hailemeskel et al., 2016)	120
8	The role of authentic assessment to preserve academic integrity and promote skill development and employability	(Sotiriadou et al., 2020)	117
9	The impact of the COVID-19 pandemic on the quality of educational process: A student survey	(Radu et al., 2020)	109
10	Learning culture and feedback: An international study of medical athletes and musicians	(Watling et al., 2014)	103

2) Author Analysis

3) Figure 3 shows that some of the ten most productive academics in the field of Sport Management In Students have made significant contributions through their publications. With eight to twelve articles offering insights into student sport management, Taylor Elizabeth A, López-Carril S, Mazerolle Stepanhie M, Sauder Molly H, and Deluca Jaime R have all made significant contributions, as shown in Table 2. Following them are Covassin T, Kerr Zhacary Y, Hardin R, Iverson Grant L, and González-Serrano M, who have made significant contributions to the study of student sport management with four to five articles. However, in terms of citations, the order of authors changes, with Kerr Zhacary Y having the most citations, demonstrating an exceptional level of activity with his seven papers. The researchers commitment to innovation and knowledge advancement in the field of Sports Management in Students.

Tabel 1. Top 10 articles with the most citations on Scopus			
No	Document title	Authors and Year	Citations Total
1	Improved outcomes after hip arthroscopic surgery in patients undergoing t-capsulotomy with complete repair versus partial repair for femoroacetabular impingement: A comparative matched-pair analysis	(Frank et al., 2014)	283
2	A National Study on the Effects of Concussion in Collegiate Athletes and US Military Service Academy	(Broglio et al., 2017)	251

Figure 3. Productive Authors based on Documents and Citation

Table 2. Authors, documents and citations.

Rank	Author	Doc.	Cite	Rank	Author	Doc.	Cite
1	Taylor, Elizabeth A	12	131	6	Covassin, Tracey	8	175
2	López-Carril, Samuel	9	110	7	Kerr, Zhacary Y	7	294
3	Mazerolle, Stepanhie M	8	103	8	Hardin, Robin	7	94
4	Sauder, Molly Hayes	8	69	9	Iverson, Grant L	6	81
5	Deluca, Jaime R	8	80	10	González-Serrano, Mariá Huertas	6	55

Table 3 (continued).

Rank	Author	Doc.	Cite	Rank	Author	Doc.	Cite
4	United Kingdom	59	904	9	South Korea	30	144
5	Canada	56	676	10	Iran	26	93

4) Country Analysis

The top ten countries by document production in the field shown in Table 3, with the United States leading with 501 documents, China second with 198, and Spain, the United Kingdom, and Canada contributing 70, 59, and 56 documents, as well. Table 3 shows the top ten countries by citations, with the United States leading with 6336 citations, followed by Spain with 914 and the United Kingdom with 904. Figure 4 displays the spread of collaborative networks, with the United States as the most prominent country, followed by China, Spain, the United Kingdom, and Canada. These countries have excellent academic collaboration and large presence in the subject, reflecting their influence and impact in Sports Management In Students.

5) Co-occurrence Analysis of Keywords

Keywords and Co-keywords are key ideas in bibliometric research used in the identification and analysis of primary topics or subjects within a given research field. Keywords are terms or phrases that authors use to represent the primary subjects or issues in an article or scientific study. These keywords frequently reflect the study fundamental substance, giving insight into the research primary topic. By analyzing keywords, academics can better comprehend trends within a field, discover popular issues, and analyze the direction of ongoing research innovations (Huertas González-Serrano et al., 2019). Co-occurring keywords, or keywords that occur together, are instances when two or more keywords appear frequently within the same document. Co-occurring keyword analysis shows the relationships and correlations between concepts or themes, as evidenced by the co-occurrence of these terms (Lis, 2020). This method not only shows frequently discussed issues, but also helps identify networks or clusters of interconnected topics, revealing trends and patterns of the researches. For this research, we generated a co-keyword graph applying VOSviewer's co-keyword function, the fractional counting approach, a minimum keyword occurrence of two, and author keywords as the unit of analysis. Table 4 and Figure 5 of the clustering research show how the relationships and correlations between concepts or themes each cluster was grouped and presented.

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Fig 4. Most productive countries based on documents and citations

Fig 5. Keyword Analysis

Table 3. Country, documents and citations.

Rank	Author	Doc.	Cite	Rank	Author	Doc.	Cite
1	United States	501	6336	6	Australia	41	763
2	China	198	824	7	Turkey	34	166
3	Spain	70	914	8	India	31	56

Table 4. Clusters and Keywords based on VOSViewer

Cluster	Item	Colour	Percent	Total
Cluster 1	*Application, article, author, barrier, benefit, career, case study, challenge, class, classroom, college, college student, community, concept, course, data collection, degree, development,*	Red	54.39%	62

	educator, experience, faculty, field, goal, higher education, implication, institution, interest, interview, issue, learning, literature, motivation, opportunity, order, organization, paper, perception, perspective, physical education, problem, process, project, qualty, resource, service, skill, sport industry, sport management, sport management program, sport management student, sports activity, system, teacher, teaching, technology, theme, theory, university, view, way, work			
Cluster 2	*Adolescent, age, assesment, association, athlete, athletic trainer, care, child, coach, concussion, control group, correlation, cross sectional study, day, difference, effect, evidence, factor, female, frecuency, gender, high school, injury, intervention, majority, male, man, measure, month, parent, participant, patient, population, prevention, respondent, return, risk, sample, scale, score, self, sex, significant, difference, stress, student athlete, symptom, total, university student, variable, week, woman, year*	Green	45,61%	52
Total			100%	114

IV. DISCUSSION

Based from the research findings, various major findings emerge about research trends and contributions in the field of Sports Management in Students between 2014 and 2024. The publishing trend analysis shows an increasing trend over the decade, with major peaks in 2020, 2022, and 2024, indicating a growing interest and investment in this sector of research, interest in sports management in students has increased overtime. According to citations, the piece having the most significant impact was authored by Frank (2014) by title "*Improved outcomes after hip arthroscopic surgery in patients undergoing t-capsulotomy with complete repair versus partial repair for femoroacetabular impingement: A comparative matched-pair analysis*" with total 283 on citations.

For the 10 most productive researchers in publishing quality articles and adding a lot of insight, shown in Figure 3, some of the authors are Taylor Elizabeth A, López-Carril S, Mazerolle Stepanhie M, Sauder Molly H, and Deluca Jaime R. This contribution not only enlightens academic insights, but also demonstrates dedication to enhancing knowledge and innovation in student sports management. Kerr, Zhacary Y, analyzed as the author with the most citations and has an impact on this research. The United States leads the top ten countries by citations (6336), followed by Spain (914), and the United Kingdom (904) shown in Table 3. Because of the popularity of sports, the need to of sport management, and programs that properly train practitioners, the United States is the nation that publishes the most articles and receives the most citations (Stokowski et al., 2022). The distribution of collaborative networks is seen in Figure 4, with the United States leading the group, followed by China, Spain, the United Kingdom, and Canada. These nations has strong academic connections and significant involvement in the field demonstrate their impact on sports management in students.

Also the study used co-keyword analysis to identify topic clusters and interrelationships between research topics. This methodological approach made it easier to identify major topics and developing trends in the literature, allowing for a more structured understanding of the interconnection of ideas and guiding future research objectives. The mapping of these co-keyword clusters contributes to refining and expanding the scientific discourse on sports management in students. By mapping co-keyword clusters, researchers can find patterns and relationships within a field of study by visually recognizing groupings of linked topics that regularly co-occur in scholarly articles (Alpen et al., 2022). Based on the emergence of keywords, the topic of sports management in students is very exciting to study. Sports management has a significant influence on student character and a fundamental influence on basic sports management knowledge in schools. This can be detected from the cluster and the percentage of its emergence, for example in *Cluster 1*. As a result, based on publication growth trends and the author keywords, this bibliometric analysis might suggest suggestions for further study. These aspects are essential for future researchers to provide insight or address general issues presented by earlier research in the field of sport management in students. Other approaches or reviews, such as narrative reviews, scoping reviews, systematic literature reviews, or meta-analyses, may also be used to describe the connections spotted in the research. These results guide future research aimed at improving sport management education and development outcomes in students, in addition to informing the current research. It is hoped that readers, instructors, and researchers will be better able to find important information for their next research projects evaluating existing past researches.

Furthermore, we recognize that this study has a number of limitations that require evaluation. Bibliometric analysis frequently relies on databases such as Scopus, the restricted scope of these databases may result in biased or non-representative conclusions, particularly if only a few fields or languages are included. Research from unknown journals or outside of large databases usually gets underrepresented. Also,

the analysis is limited by the availability of data through 2024, which may cause it to lose sight of the latest advances researches after this date. Analysis using keywords and co-keywords frequently is unable to capture the entire details of a study issue. Keyword relationships provide only a basic insight and might overlook important aspects of sports management in students that are not included in article keywords or abstracts, Despite efforts to pick keywords, it's possible that some relevant articles were missed, which would have reduced the analysis accuracy.

V. CONCLUSIONS

In conclusion, this study provides thorough insights into the development, patterns, and collaboration relations of research in the field of sports management in students between 2014 and 2024. This researsh found that publications in 2022 and 2024 increased significantly, suggesting that interested in sports management in students are rised. The author with the most citations (294), Kerr Zhacary Y, has a significant impact on this study. The top ten most productive academics in the field of Sport Management In Students have made significant contributions through their publications. With eight to twelve articles offering insights into student sport management, Taylor Elizabeth A, López-Carril S, Mazerolle Stepanhie M, Sauder Molly H, and Deluca Jaime R. United States, the nation that publishes the most articles and receives the most citations, followed by 4 countries behind are shown in figure 4. To improve our comprehension and implementation of sports management in students, future researchers could investigate broader literature sources and qualitative aspects, as suggested by limitations in language bias, publication selectivity, and the bibliometric approach.

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