BIBLIOMETRIC ANALYSIS WITH VOSVIEWER: RESEARCH TRENDS IN SPORT MANAGEMENT WITHIN EUROPEAN FOOTBALL

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Abstract. *Sport management is a rapidly expanding field of study that produces a growing body of academic literature. Using bibliometric analysis, data from the Web of Science database and VOSviewer software, this paper attempts to provide a general overview of the field and highlights the consensus among academics. The analysis found that Web of Science published 156 unique articles. It also seeks to pinpoint the key subjects that brought together the research on European football sport management, as well as the most important clusters and emerging trends of study in this field. The multidisciplinary nature of the topic is reflected in the Web of Science categories associated with the articles: Hospitality, Leisure, Sport, Tourism, followed by Management. The following subject areas registered, also, significant results in terms of number of articles: Sport Sciences, Business and Economics. In considering publishers, the highest number of articles were released under the auspices of Taylor & Francis, Emerald, MDPI, Elsevier and Sage. From a practical perspective, the study helps sport managers become more situational aware by emphasizing the critical issues and assisting them in identifying research gaps for further academic exploration. This closes the feedback loop between theory and practice.*

Keywords*: sport management; European football; bibliometric analysis; Web of Science database.*

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Introduction

Over time, the sport has developed from leisure pursuits associated with a healthy lifestyle or amusement to a fully-fledged international industry, generating billions of dollars annually, under the direction of managers with extensive experience. Since the turn of the millennium, sport has seen the most notable shifts brought about by globalization and technical advancement. Because of the sport's unique characteristics, managers are forced to apply management strategies outside the traditional purview of management theories, even in an era of modernization, automation, and a single, sizable global market (Varmus et al., 2021).

A close-up look at the field can be obtained by using bibliometric analysis, which examines the scientific literature written about a certain subject (Özkaya, 2018).

Bibliometric techniques offer a new perspective on knowledge by examining any type of study in which there are linkages between the studies and in the corpus of the studies assessed. Trends can be identified by comparing the systematic review of the literature with the mapping of science using a macro approach. As a result, a wide range of studies can be handled, and a specific research subject can be graphically represented (Zupic & Cater, 2015).

According to Cohen et al. (2020), the worldwide disruption of sports should be viewed as an opportunity to reevaluate the organization and consequently, management of sports. Sports and entertainment industries were forced to innovate due to the effects of the COVID-19 pandemic on the sports industry as a whole, which included lost revenue, athletes facing difficulties, cash flow issues for organizations, unemployment, and unpaid freelancers (Byers et al., 2022).

High-frequency keyword co-occurrence analysis method was employed to identify leading and emerging themes in the field of study. Web of Science (WoS) database provided the bibliometric data necessary for analysis. The analysis procedure and the viewing of the results were facilitated by the VOSviewer software.

This study aims to map the thematic landscape of sport management research within European football. The following research questions are the main emphasis of the process: What are the main themes that academics are interested in studying? Which areas of sport management research are now gaining attraction?

Sports organizations play a crucial role in delivering value to stakeholders within the sports industry. Among these organizations, Real Madrid and Manchester United stand out as the two most prominent soccer teams in the world. Their power and position in the worldwide market, which extends beyond the ranks of sports enthusiasts, are already evident. Sports fans, regardless of the nature of the sport, tend to have a preference for their favorite team. But it also encompasses a wide range of leagues, associations, media outlets, owners of sports facilities and arenas, manufacturers of apparel and accessories, bookmakers, and numerous other organizations connected to sports (Varmus et al., 2021).

Identifying emerging topics helps academics who are looking for fresh, intriguing study ideas. From a business perspective, this study helps sport managers become more situational aware by emphasizing the issues for further exploration by academic institutions. This closes the feedback loop between theory and practice.

Literature review

Understanding the concept of sport management

According to Shilbury and Rentschler (2007), sport management is a multidisciplinary field rooted in business and leisure, which themselves draw from sociology, economics, psychology, and law.

In evaluating the current status of sport management research, Frisby (2005) inadvertently provided explanations for why weak paradigm development may impact sport management as well as management more broadly. "We need research to be conducted from multiple paradigms" was Frisby's argument if the roots of sport management may be found in several disciplines.

Since the turn of the twenty-first century, managing sports organizations has involved the use of methods and approaches common to most contemporary governments, corporations, and nonprofit organizations (Hoye et al. 2015). Sports managers are tasked with overseeing the well-being of elite athletes - who may earn up to 100 times their average salary - managing massive human resources, dealing with billion-dollar broadcasting contracts, engaging in strategic planning, and operating within a highly integrated global network that includes national sports organizations, international sports federations, governments, agencies, media corporations, sponsors, and community organizations (Varmus et al., 2021).

As its name suggests, management is a primary research focus of sport management, despite the field's multidisciplinary foundation. Generally speaking, the word "management" refers to all elements of the organization, such as marketing or finance (Chalip, 2006).

Sport management in football

In football, identifying performance measures that significantly distinguish winners from losers is essential for understanding the aspects contributing to success. However, determining what elements are essential for effective performance is a difficult task (Hughes and Franks, 2004).

Since football teams are now recognized as legitimate enterprises, they behave and make choices more like businesses. Nevertheless, their mission statements pertaining to sports distinguish football companies from other small businesses. In actuality, football teams essentially aim to maximize victories rather than profits; they may even take on debt or reinvest earnings in order to pay for the acquisition of new players (Kwon & Kwak, 2022). In essence, clubs aim to spend as much money as possible to win. They therefore try to make a little profit in order to balance their budget. Unforeseen and unfavourable shocks would quickly drain funds, rendering individuals more vulnerable to financial difficulties (Tettamanzi et al., 2024).

Reep and Benjamin (1968) introduced an original method for examining 3,213 matches in England from 1953 to 1968 employing frequency distributions in an additional early performance analysis. According to their data, scoring a goal typically required 10 shots, with 80% of goals scored after three or fewer passes. Reilly et al. (2013) expanded the scope of football analysis, covering a number of topics such as referee decision-making, computer-aided performance analysis, and team management.

Hughes and Franks (2004) noted that the inaugural World Congress of Science and Football, held in Liverpool in 1987, was a significant event for the fields of science and football. Encouraging multidisciplinary collaboration, knowledge advancement, and worldwide networking, the first World Congress of Science and Football brought together professionals from many fields to share insights on research and advancements in football.

The success rate of goal achievement by a management team typically determines whether or not that management is deemed successful. Setting up categories along which management performance can be evaluated is essential. It's obvious that business objectives differ greatly (financial vs. non-financial, etc.), making it difficult to develop a universal strategy (Zülch et al., 2020).

It is crucial for sports clubs to distribute the financial resources derived from athletic success to all of the club's activity areas in a balanced way. Additionally, investments should be split to allow for development, growth, and the creation of economic magnitude, which can then be transformed to support athletic achievement once more (Samur, 2018).

Taking on the role of manager is a demanding and volatile profession, where one is held accountable to the public for the success of their team. Given the unstable nature of the job, more than half of the 92 managers who began the 2004-2005 season of the English premier league were dismissed by its end (Crust and Lawrence, 2006).

According to Samur (2018), the higher levels of football management demand that professional teams maintain a high standard of management, attain organizational heights that augment economic and financial prospects, instil greater discipline and reason in football accounting, and develop proficient management and organizational abilities through football-derived revenue.

There are a lot of incorporated sports teams nowadays. Along with success in their respective sports, sports clubs' primary objective is to boost their profitability. In order to boost their revenue, clubs are deciding to mirror the rivalry they face in the sporting sphere in business domains (Samur, 2018).

Zülch et al. (2020) assert that quality management is a crucial differentiator because of variances in the clubs' capacities to handle the increased complexity. Recent years have seen a significant increase in the complexity of managing a football club due to their transformation into football companies and the entry of new stakeholders.

Methodology

The bibliometric analysis in this study used the Web of Science core collection, chosen for its higher quality standards, as determined by researchers. Figure 1 displays an overview of the study plan. The search was carried out in September 2024.

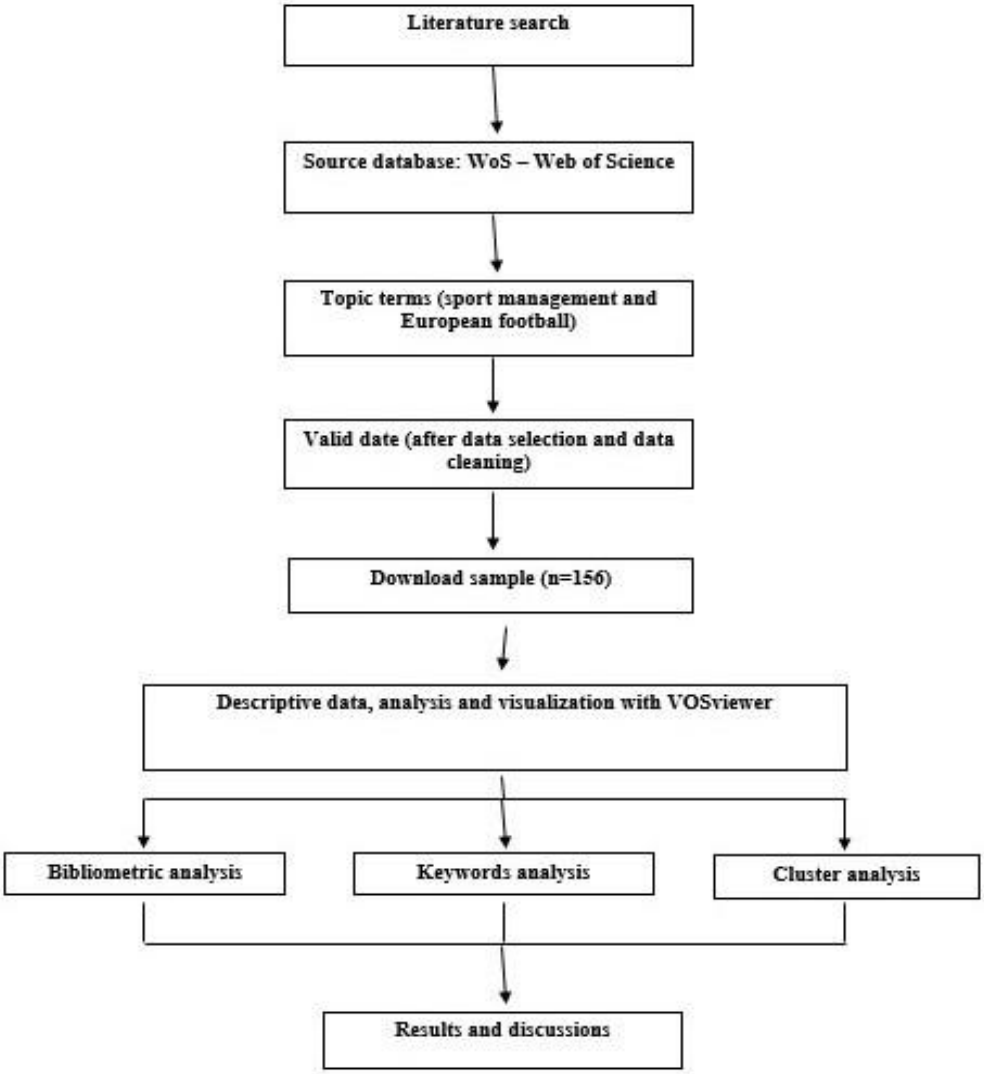

Figure 1. Research framework of future trends in sport management in football

Firstly, we developed a keyword search in the Web of Science database. The search approach included a variety of keywords related to sport management and football (European football AND sport management). The database search returned 175 articles.

Additionally, we keep early access papers, proceedings papers, and book chapters. A Web of Science search yielded 163 results. Linguistic screening was the third phase. The papers that were retained were only English-published papers. Bibliometric analyses were prepared for the remaining 156 publications that passed the screening process.

The following research questions are the main emphasis of the process: What are the main themes that academics are interested in studying? What areas of sport management research are currently gaining traction? To offer a comprehensive assessment of the European football sport management sector, the purpose of this study is to determine the main subjects covered in the research and offer solutions.

Results

This study conducted a bibliometric analysis of sport management in European football, examining a total of 156 articles. The bibliometric analysis was performed using the VOSviewer software.

VOSviewer is a tool used to create, display, and analyse network data maps (Visser et al., 2021). Web of Science yielded 192 papers that were exported (in a plain text file containing all the records and cited references) to facilitate the creation of new maps. For formatting purposes, a Thesaurus file was used. Bibliometric variables such as the cooperation index, evaluations of sources, authors, citations, keywords, and keywords-plus were combined with descriptive statistics to provide a summary of the data.

Analysis of the study search results

The search for "European football" and "sport management" in the Web of Science database, applying the filters outlined in the methodology section of this study, identified 156 articles published between 2007 and 2024 (Figure 2).

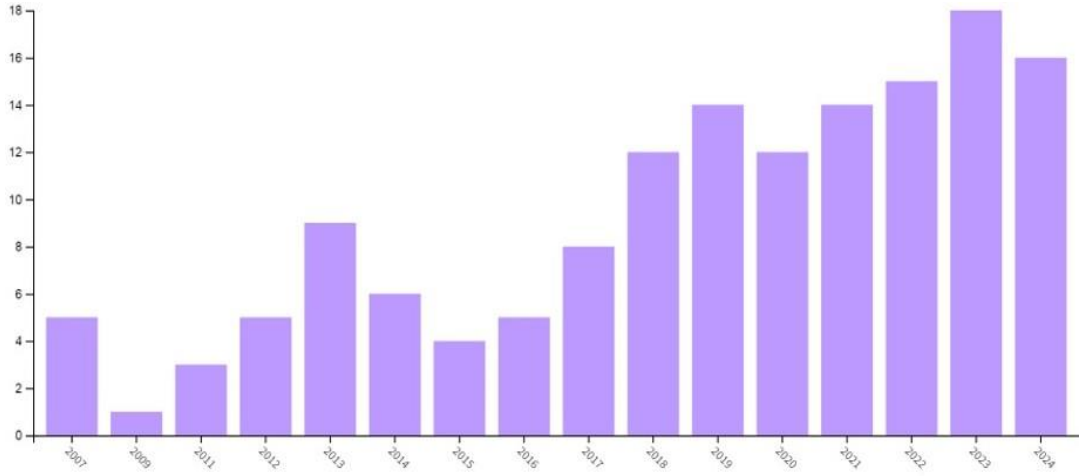

Figure 2. Documents by year (2007-2024)

The multidisciplinary nature of the topic, including aspects of change management, is reflected in the Web of Science categories covered by the resulting articles (Figure 3). First, we have Hospitality, Leisure, Sport, and Tourism with 53 documents, followed by Management, with 31 articles. Other significant subject areas include Sport Sciences (21 articles), Business (12 articles) and Economics (10 articles).

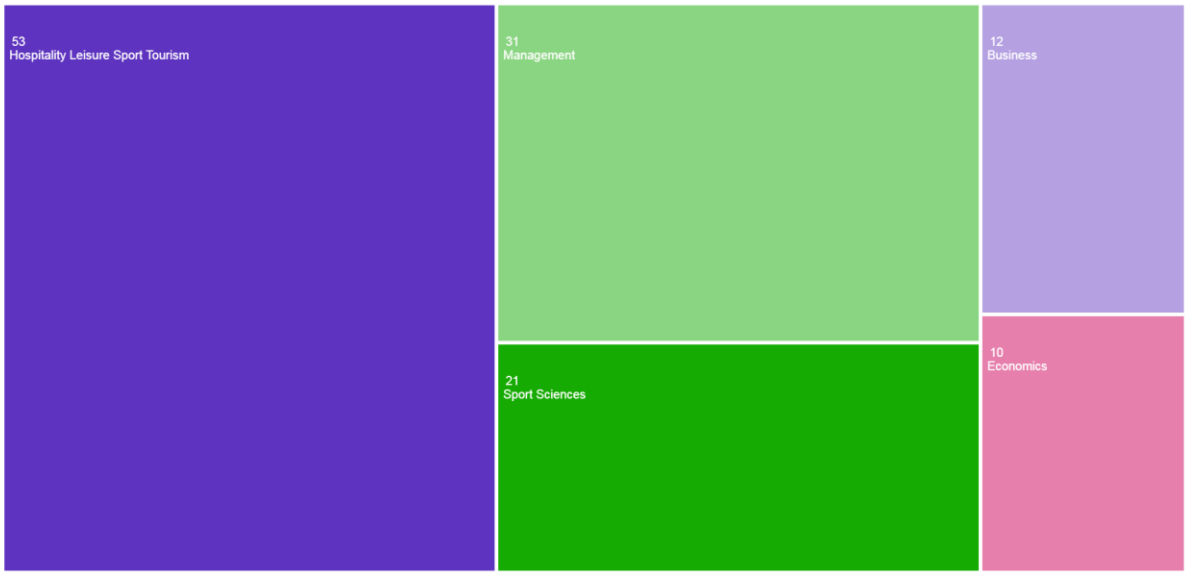

Figure 3. Web of Science categories of the research data

A total of 481 authors contributed to the 156 articles analysed. According to the Web of Science data, one author stands out with four articles, while the remaining authors each contributed three articles or fewer (Figure 4).

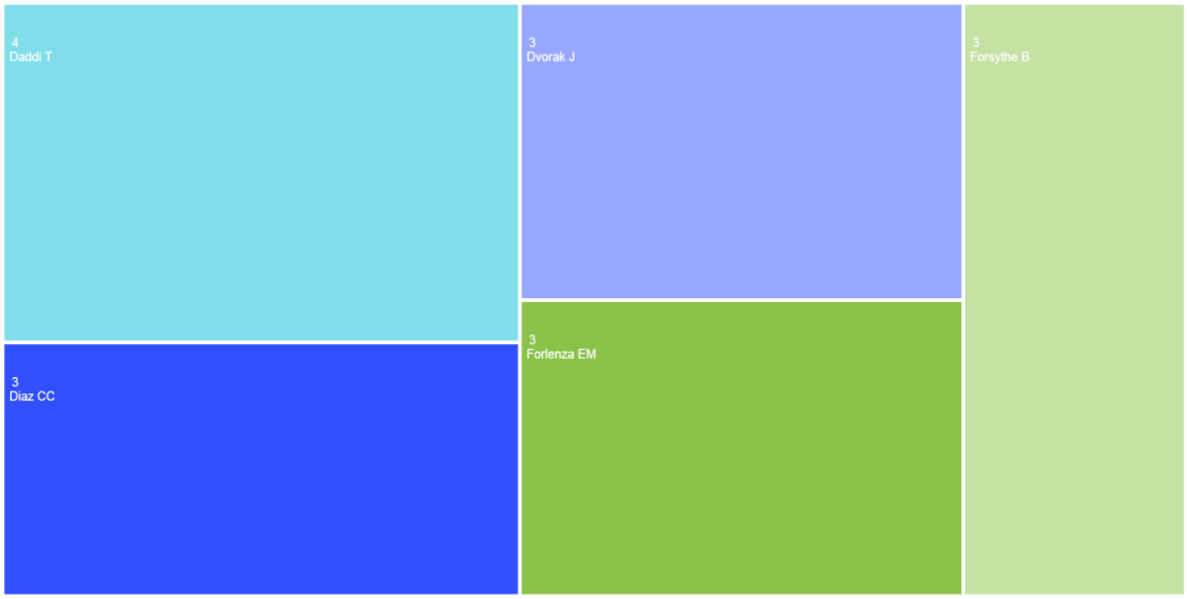

Figure 4. Top 10 Authors

In considering publishers, the highest number of articles (Figure 5) were published under the auspices of: Taylor & Francis with 37 results, Emerald with 23 results, MDPI with 14 results, Elsevier and Sage each with 12 results.

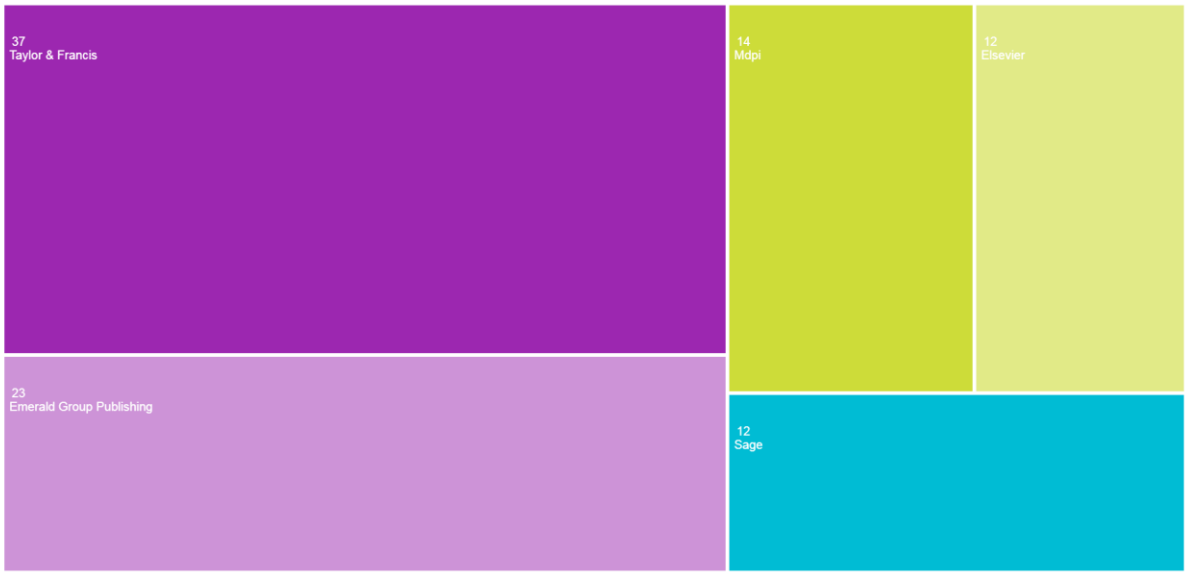

Figure 5. Top 10 Publishers

The research areas criterion reveals a wide range of topics. The most represented research areas are (Figure 6): Social Sciences with 56 results, Business Economics with 52 results, and Sport Sciences with 21 results.

Figure 6. Top 10 Research areas

Bibliometric analysis using VOSviewer software

The study focused on the co-occurrence of all keywords rather than author keywords, as it was believed to provide a better understanding of the research issues.

The map was created using VOSviwer software, setting a threshold of 5 occurrences per keyword. Out of 974 keywords, 38 met the threshold, and for each, the total strength of the co-

occurrence links with other keywords was calculated, and the number of keywords selected remains 38. Figure 7 shows the analysis of keyword co-occurrence.

Besides football (with 51 occurrences and 128 total link strength), the keywords with the most powerful total link strength are: performance (with 29 occurrences and 106 total link strength), competitive balance (with 15 occurrences and 75 total link strength), professional football (with 18 occurrences and 75 total link strength) and management (with 23 occurrences and 73 total link strength).

Five clusters may be noticed in figure 7, considering a resolution of 1 and a minimum cluster size of 2 items. The clusters are centred around the following keywords: performance (cluster 1 – red), professional football (cluster 2 – green), competitive balance (cluster 3 – blue), sport (cluster 4 – yellow), and financial performance (cluster 5 – purple).

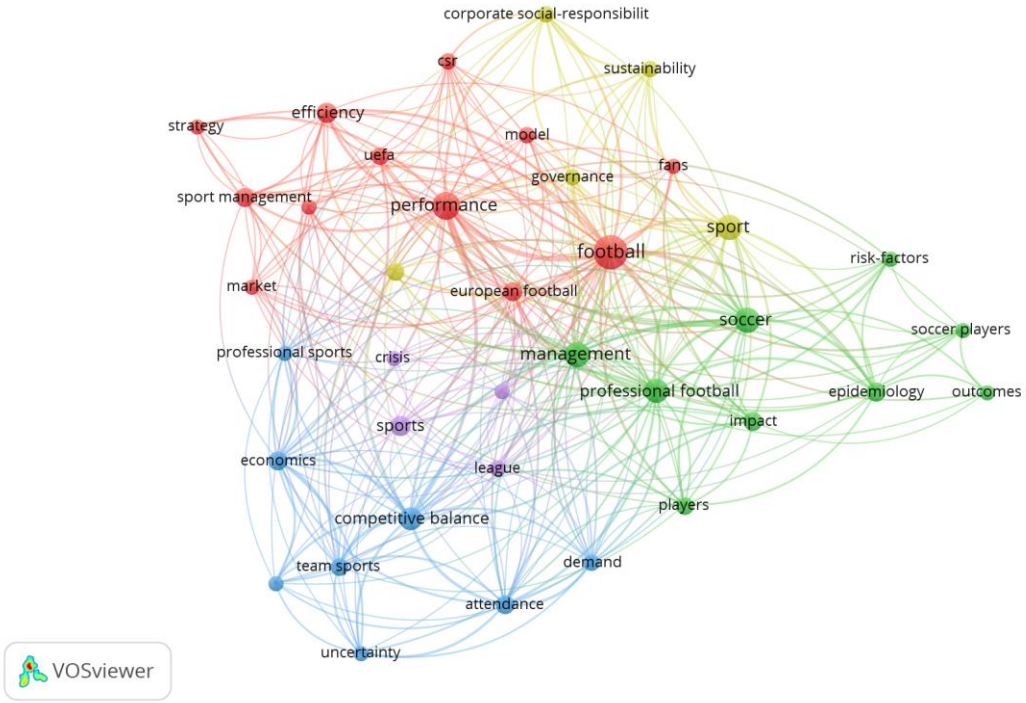

Figure 7. Analysis of co-occurrence of all keyword: sport management in European football

The citation by Documents analysis was based on a threshold of 3 citations per document and was met by 96 documents. VOSviewer software evaluated the total strength of citation linkages with other sources. The largest group of connected items led to 31 (as shown in Figure 8).

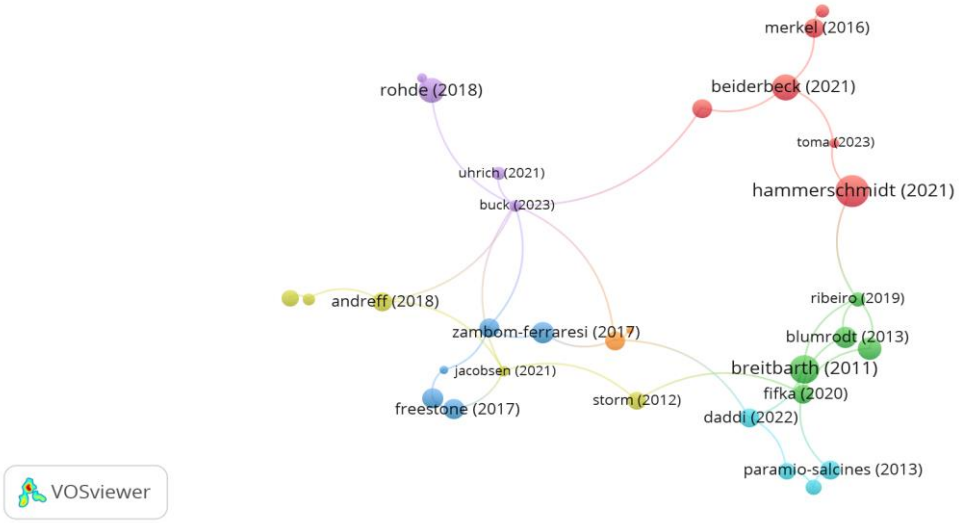

Figure 8. The citation by documents analysis: sport management in European football

The citation analysis by author considered a threshold of 1 document per author, which was met by 393 authors. VOSviewer software evaluated the total strength of citation linkages with other sources. For the 393 selected authors, the largest group of connected items consisted of 100 authors (Figure 9).

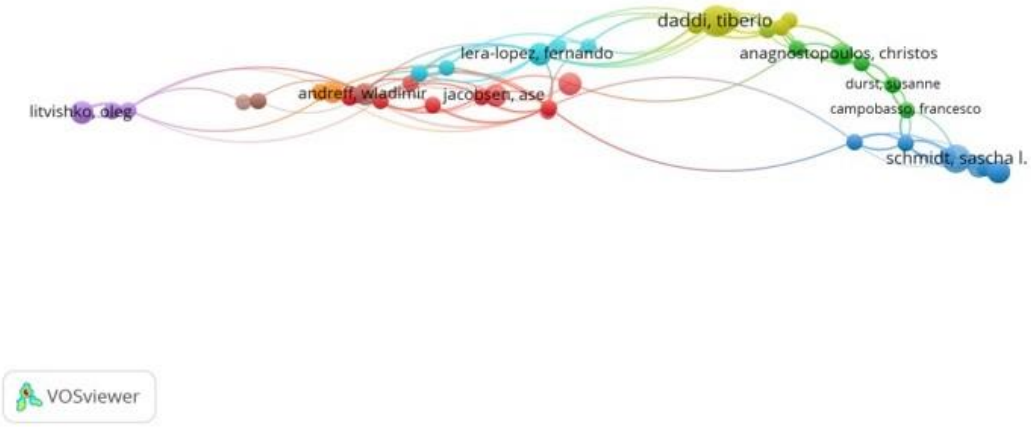

Figure 9. The citation by author analysis

The co-occurrence map of KeyWords Plus was created with a minimum threshold of 5 occurrences per term. Out of 467 terms, 28 met this threshold. For each of them, the total strength of the co-occurrence links with other keywords was calculated, and the number of selected keywords remained 28 (as shown in Figure 10).

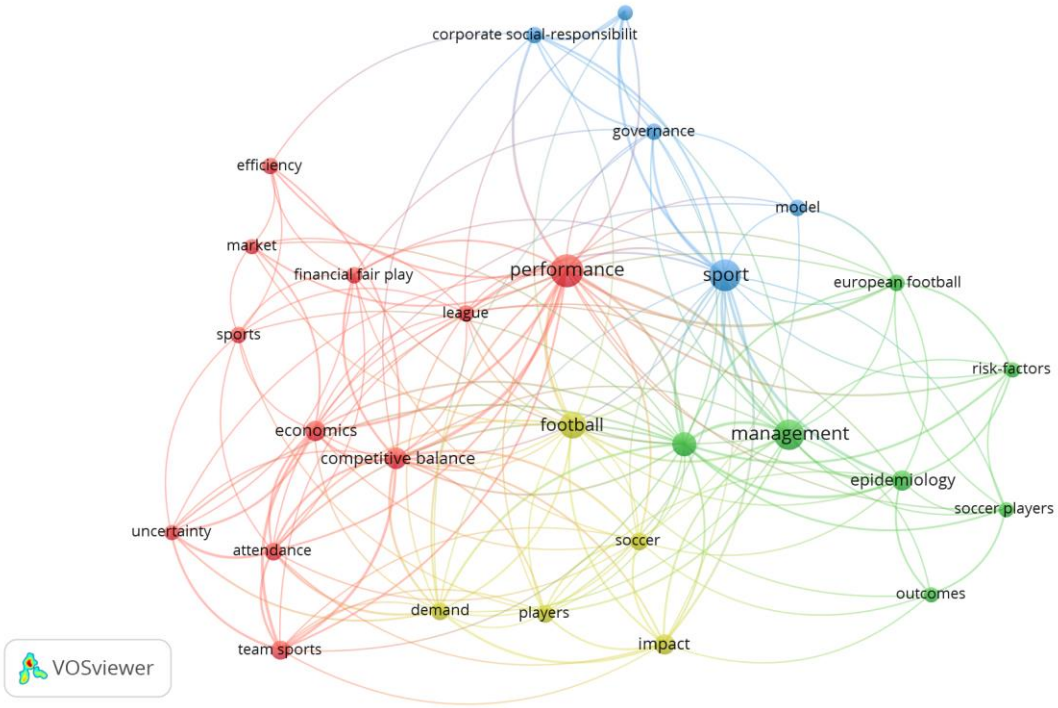

Figure 10. Analysis of co-occurrence of KeyWords Plus

In Figure 10, the co-occurrence of all keywords, assuming a minimum cluster size of 5 items reveals 5 clusters – centred around the following keywords: performance (cluster 1 – red), professional football (cluster 2 – green), competitive balance (cluster 3 – blue), sport (cluster 4 – yellow), and financial performance (cluster 5 – purple). These clusters provide a more comprehensive view on the topic of sport management in European football and highlight future trends on this subject.

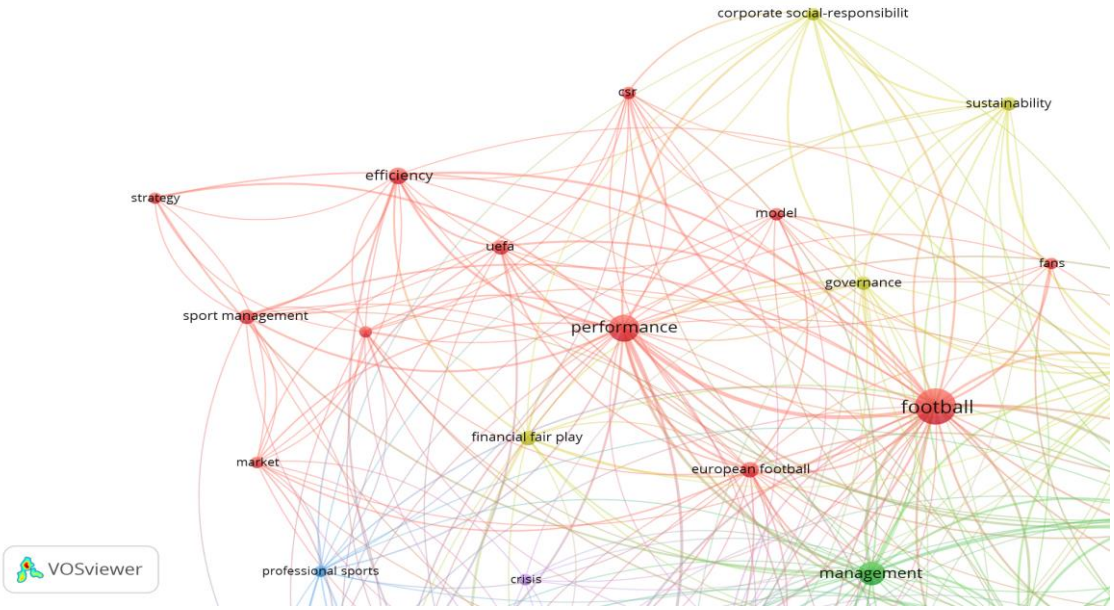

Figure 11. Cluster 1 (red) – performance

Other relevant terms – football, sport management, European football, strategy, efficiency, CSR, market, fans.

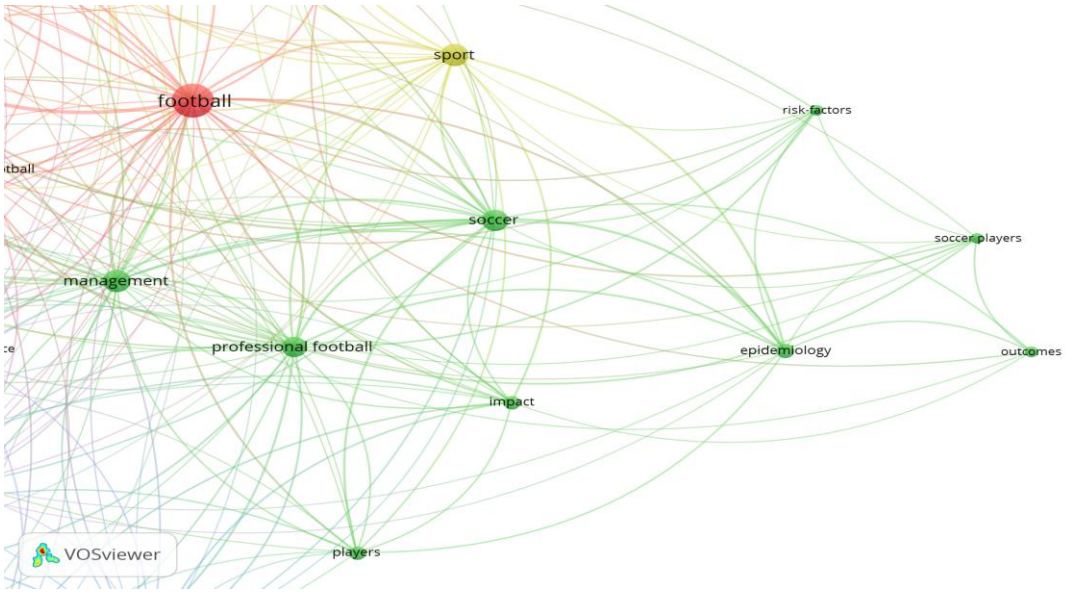

Figure 12. Cluster 2 (green) – professional football

Other relevant terms – management, soccer, risk-factors, players, outcomes.

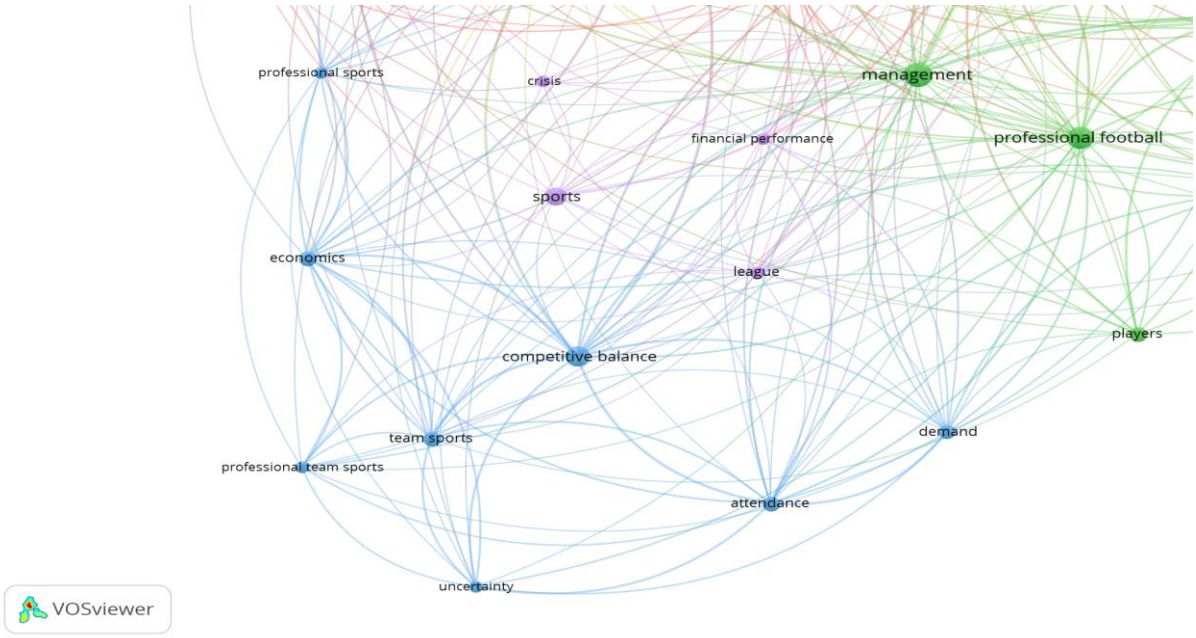

Figure 13. Cluster 3 (blue) – competitive balance

Other relevant terms – demand, attendance, team sports, economics.

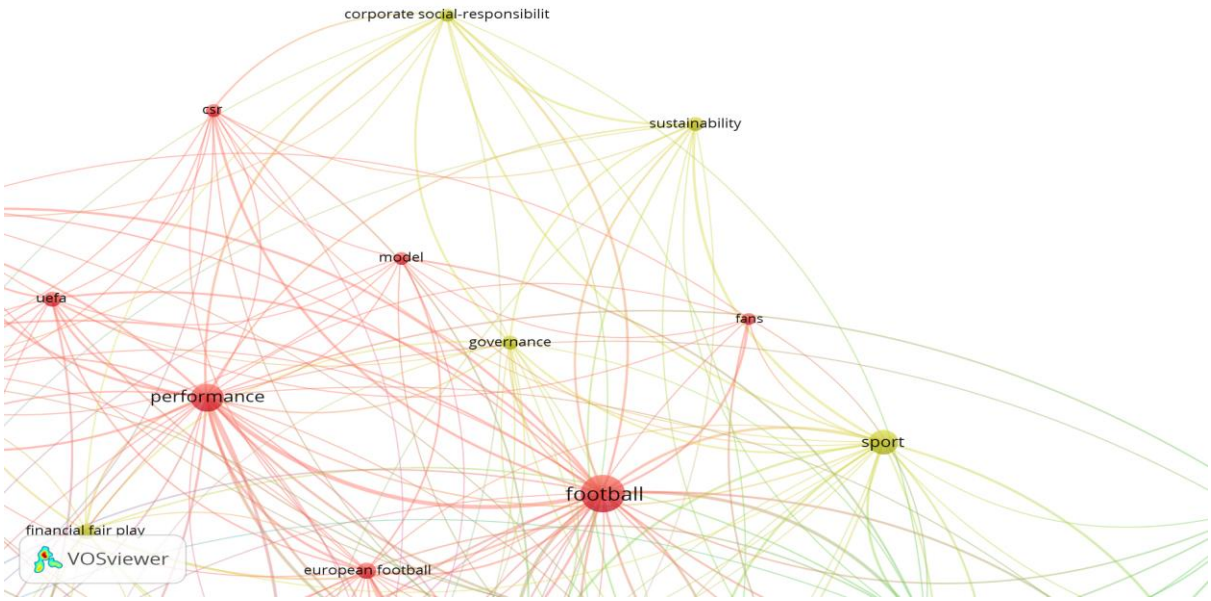

Figure 14. Cluster 4 (yellow) - sport

Other relevant terms – sustainability, governance, CSR, financial fair play.

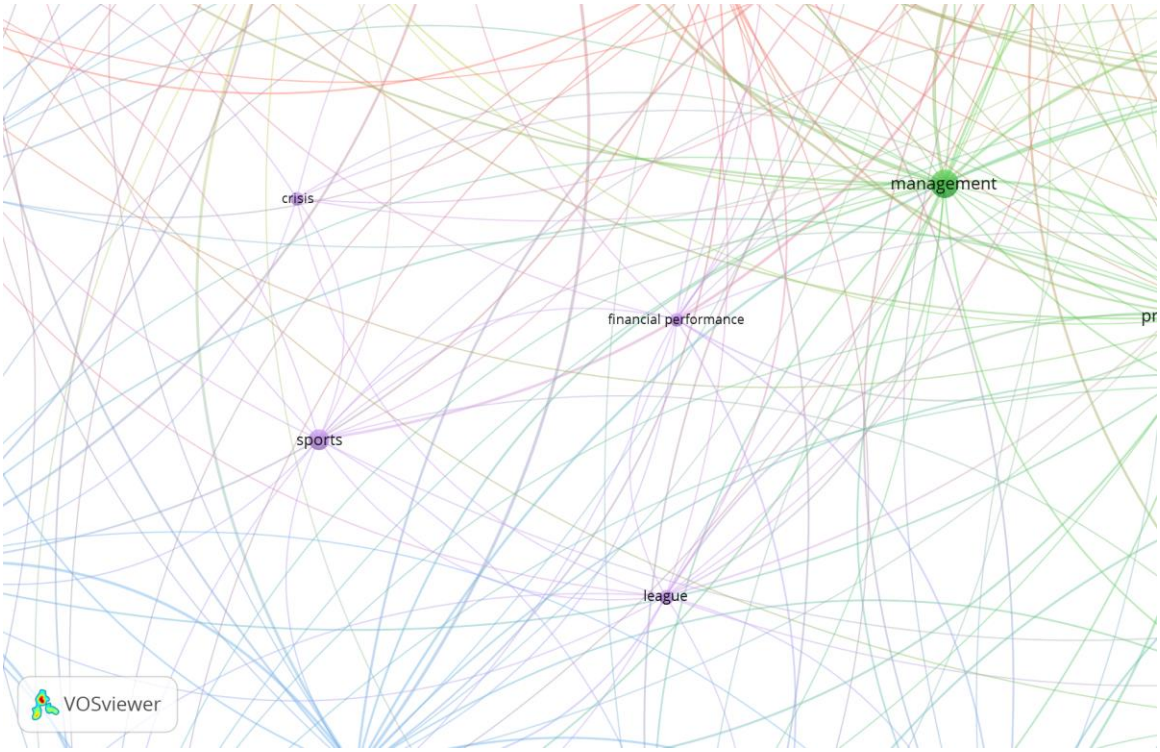

Figure 15. Cluster 5 (purple) – financial performance

Other relevant terms – sport, crisis, league.

Discussions

Navigating the complex environment of football management, which is filled with operational, financial, and strategic challenges, is essential for determining the viability and success of football teams in various competitions.

This study set out to provide a comprehensive overview of the corpus of knowledge related to football sport management. We used several bibliometric indicators in our analysis.

We examined every keyword that appeared at least twice in the co-occurrence matrix in greater detail. Figure 16 illustrates how sport management in European football extends beyond football itself. Out of 974 terms, 38 terms met the criterion of a minimum of 5 occurrences of a keyword. This subject is closely related to performance, competitive balance, efficiency, sustainability, CSR, governance, financial fair play, financial performance, strategy, and outcomes. The map allows us to gain a better understanding of every term associated with European football sport management.

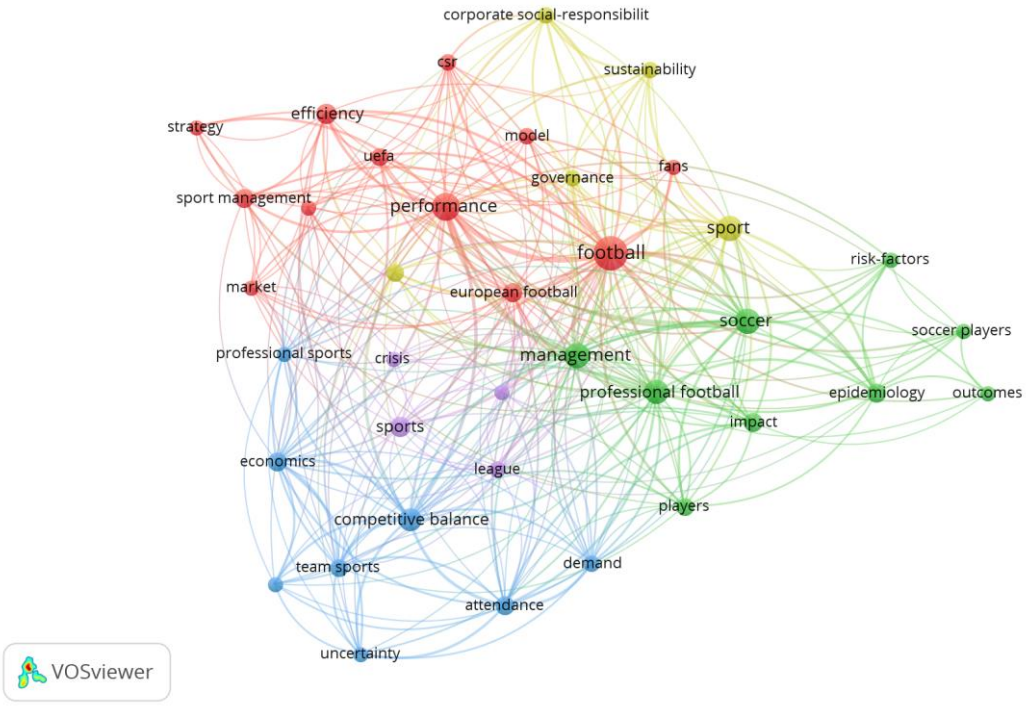

Figure 16. Co-occurrence of all keywords: sport management in European football

Beginning in the early years of the twenty-first century, academic research in sports management increased significantly due to pressure from sports organizations (federations, clubs, etc.). Examples include research on improving volunteer commitment (Thorpe & Chawansky, 2017), sports fan experience (Asada et al., 2020), and generally defined sport-for-development (Lyras & Peachey, 2011).

According to Lis and Tomanek (2020), the growing popularity of the field has led to an increase in scientific output. The Scopus database has identified over 2,000 publications addressing sport management (those containing the term "sport management" in their titles, keywords, or abstracts). Their study highlights several key research themes in the field,

including sport staff, sport education and learning, sport governance, fans in sport, professional sport management, physical exercise and health, and sport staff are the first eight categories. The emerging areas of research include the use of new information technologies (including social media), sustainable growth in sport, fan satisfaction, and physical activity (including grassroots initiatives).

McCain (1991) further emphasized that academic journals serve as the primary formal medium for recording and disseminating research and other scholarly activities. Bibliometric researches can determine the "core" literature of different fields as represented in their journal literature by performing citation analysis on references found in journal articles. A bibliometric analysis of four sport management journals is one of the many bibliometric studies on journals that have been completed previously (Shilbury, 2011).

Gholampour et al. (2019) conducted a bibliometric study using the WoS database to explore the research trends in Sport Management Review. Their bibliometric study set out to explore, from different bibliometric indicators' points of view, the research patterns of the journal (SMR) between 2011and 2018, based on the Web of Science database.

Based on the keywords provided by the authors of the papers published in Sport Management Review (SMR), the co-occurrence map revealed that the most popular topics and co-occurrences in the SMR journal were sport, marketing, professional sport, intercollegiate athletics, sport improvement, sponsorship, sport management, sport policies, social media, and sport marketing (Gholampour et al., 2019).

Focusing on research productivity and key contributors, Durán-Sánchez et al. (2017) examined the body of literature on the topic of quality management in sports. In the field of sport management research, Ciomaga (2015) addressed convergence challenges. Scintometrics was used by Koliada et al. (2019) to investigate effective adoption of artificial intelligence concepts in managing sports team interactions. In their study, Belfiore et al. (2019) explored the connections between sport management and educational management using general publication profiling methodology. To ascertain the standing of top journals in the field, bibliometric analysis was used in the second category of publications, including Shilbury's (2011) works.

The bibliometric co-citation analysis was used by Ciomaga (2013) to chart the paths taken by sport management research over time. According to the results of his bibliometric analysis of the scientific output published in three sport management journals between 1987 and 2020, there were several prominent trends that dominated the field during this period.

These trends included organizational change, consumer motivation in sport marketing, and diversity in organizations. Less significant developments include interest in sport economics, the effects of sporting events, and the state of sport management research (Ciomaga, 2013).

Lis and Tomanek (2020) highlight several variables that contribute to the quality of sport, including fan satisfaction, benchmarking, sporting facilities and infrastructure, technology, relationship architecture, industry knowledge, and competencies. Additionally, Loia and Orciuoli (2019) investigate how augmented reality might be used for learning sports.

The ongoing challenges posed by the pandemic have accelerated a shift toward innovation and a new future. Football teams, sports clubs, and athletic associations in general should be actively searching for fresh and diverse ways to generate income in addition to strategies to strengthen fan relationships based on the resurging and rising needs of their supporters.

According to Tattamanzi et al. (2024), digitalization and sustainability are the two main levers that sports managers and owners should consider.

Given the prominence of the term "football", it is likely that sport management research frequently uses football as an empirical context. A sudden shift in the dominant paradigms appears naïve in terms of theme development, even if it ignores the peculiarities of each sport. Commercial thinking in sport management has been deeply ingrained in the fields (Hammerschmidt et al., 2024).

A bibliometric analysis was conducted by Hammerschmidt et al. (2024) using publication data from the top five sport management journals for the years 2011–2020. Co-word analysis results revealed that the field is dominated by four theme clusters: management of sport organizations and events; team, fan, and the game; marketing and sponsorship; spectator behaviour and identification. The focus on the sporting aspects of the field appears to have led the cluster around the team, fan, and game to grow out of sport, despite the prevalence of commercial subjects.

Conclusion

This study found that between 2007 and 2024, 156 distinct papers were published on Web of Science. The findings, which show the areas where most of the body of knowledge was formed, highlight the most active authors and sections of research on sport management in European football as well as future trends in this discipline.

In terms of contributions, this article is one of the first to map the body of research that examines the primary components and developing issues of football sport management. Furthermore, the framework's room for expansion can offer experts and scholars a useful way to examine and impartially validate the function of sport management in emergency scenarios.

This study developed a thematic map of sport management research. First, it identified the main themes and their composition that are attracting scholarly interest. Secondly, the research on sport management has recognized the developing topics. Thirdly, various bibliometric researches have been explored in relation to the results of the keywords co-occurrence analysis. Hence, in the area of sport management and football, this study can serve as a foundation for identifying popular subjects and well-known writers, nations, and academic institutions.

As Ratten (2010) suggested, the increasing significance of social media and other information and communication technologies (ICTs), along with initiatives focused on social responsibility, could serve as compelling topics for future research. Additionally, scholars interested in sport management are likely to focus more on the resilience of sports organizations in the face of the COVID-19 pandemic's impacts. To date, the pandemic is often regarded as a black swan event.

Football management faces significant financial challenges, including income generation and budgetary restrictions. It is imperative for managers to prudently distribute their limited resources, striking a balance between player acquisition, training facility, and operations expenses. Creative financial solutions and effective resource management are frequently required in response to the need to produce competitive performance within budgetary constraints. Creating steady revenue streams is also another major obstacle. Clubs mostly

depend on sponsorships, television rights, retail sales, and ticket sales. These revenue streams can be impacted by changes in the economy and fan engagement trends.

Football managers face a multifaceted role that extends beyond overseeing game time, addressing injuries, and managing interpersonal dynamics within the team. They must also maintain player morale, enforce discipline, and foster motivation. Furthermore, one of the biggest challenges managers are facing is cultivating a culture that values teamwork.

It takes a thorough grasp of both the team's and the opposition's strengths and weaknesses to develop and implement successful game plans. Dynamically changing tactics both during games and over a season is a skill that managers need to possess. Tactic planning must incorporate data-driven insights due to the growing reliance on data analytics in sports, which introduces another level of complexity.

Football management offers many opportunities for creativity and development, despite its difficulties. Digital platforms, youth development, health and wellness, and strategic alliances are some of the opportunities that can greatly improve a club's performance and financial stability.

The opportunities for interacting with fans through digital media are unparalleled. Enhancing fan loyalty and creating new revenue streams through digital content and goods sales are possible with social media, mobile applications, and virtual experiences. With their social responsibility programs, football teams can make a meaningful impact in their communities. Communities can be strengthened and loyalties can be fostered via programs that address youth development, health and wellbeing, and education. Moreover, smart alliances with companies and brands also present a valuable avenue for generating consistent income. Partners and clubs can benefit from joint marketing campaigns, exclusive sponsorships, and cooperative events.

While managing a football team is inherently challenging, it provides ample opportunities for creativity and strategic development. Football managers can position their teams for sustained success and resilience in a competitive environment by skilfully managing budgetary restrictions, team dynamics, and regulatory concerns while leveraging technology, globalization, and sustainable practices. In the ever-changing field of football management, the relationship between taking advantage of chances and overcoming obstacles is critical.

Bridging the gap between theory and practice, this study helps sport managers in enhancing their situational awareness by highlighting key issues that demand their attention and by helping to identify research gaps that should be submitted for further exploration by academic institutions.

However, it is important to acknowledge certain limitations of the study. The first concern is that the terms used in the search might have excluded some relevant studies. Additionally, the findings and conclusions are based solely on papers indexed in the Web of Science and written in English. More research is required to support our findings, using data from other sources and in different languages.

Last but not least, a drastic reorientation of the research interest in the subject appears to be fairly possible, given that the COVID-19 pandemic may represent a turning point for sport management. Consequently, it is advised to repeat the study in a few years to track any potential dynamic changes in the field's thematic structure.

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