

THE ROLE OF TEAM CAPTAINCY IN SUCCESS IN SPORTS TEAMS: A BIBLIOMETRIC PERSPECTIVE

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Abstract

The primary objective of this research is to determine the role of team captaincy in achieving sustainable success in sports teams. Team captaincy is directly related to elements such as leadership, motivation, psychological resilience, and team harmony, and as such, it plays a strategic role in the long-term success of sports teams. The significance of this study, in this context, is that it demonstrates that this issue is not limited to on-field performance but also requires consideration of its social, emotional, and organizational dimensions. Within the scope of the research, a total of 236 academic publications published between 1992 and 2025 in the Web of Science (WoS) database were examined using bibliometric analysis. Bibliometric parameters related to publication numbers, distribution by year, productive authors, international collaboration networks, most frequently used keywords, thematic evolution, factorial analysis, word cloud, trending topics, common word network, and author productivity were analyzed within the context of Lotka's Law. The findings reveal that leadership is the theme most strongly associated with team captaincy. Concepts such as burnout, psychological safety, teamwork, performance, and resilience reflect the multidimensional nature of the captaincy role. Furthermore, despite increasing interest in the literature in recent years, it has been observed that some themes lack consistency, and the concept of leadership is periodically addressed under different subheadings. Consequently, team captaincy is considered not only a technical but also a social, psychological, and managerial form of leadership for sustainable success in sports teams. Future research into topics such as technology-based leadership practices, the impact of cultural differences on captaincy, and team dynamics is recommended.

Keywords: Leadership, sports, sustainability, team captaincy

INTRODUCTION

In today's competitive sports environment, not only individual skills or technical-tactical competence, but also the social structure within the team, leadership relationships, and collective psychological resilience are among the determining factors in achieving sustainable success. Leaders have different effects on the success of the community they are part of (Han, 2024; Hanges et al., 2016). Especially in team sports, the quality of interaction between players, the level of commitment to common goals, and the effectiveness of leadership mechanisms directly affect performance outcomes. Leadership is an influence process applied to direct a group or team toward a common goal (Hall et al., 2002). In this context, natural or appointed leadership roles within the team play an important role; in particular, team captaincy stands out as a strategic role that is not limited to in-game direction, but also manages the social cohesion and motivation of the team. Leaders, who form an important part of team functioning and group dynamics in sports, are recognized by both athletes and coaches as the most important element of team success (Bruner et al., 2022; Duguay et al., 2019; Dupuis et al., 2006; McLaren et al., 2021; Stevens et al., 2021).

The role of team captains is critical in this context, and team captains in sports clubs are defined as formal and informal leaders (Loughead et al., 2006). The characteristic that distinguishes sports leaders as formal or informal is the tasks assigned to them. As formal leaders, team captains are expected to fulfill predefined duties, while informal leaders are expected to take on external responsibilities such as social environments resulting from human relationships and interactions (Brgoch et al., 2020).

Team captaincy involves not only technical guidance but also providing social support and boosting team motivation. In this context, while the coach acts as the official leader, the team captain takes on the tasks of helping the team adapt, providing social support, positively influencing the team's success, and assisting the coach as both an official and unofficial leader (Fransen et al., 2018; Fransen et al., 2019; Fransen et al., 2014; Loughead et al., 2016). Therefore, the team captain's leadership skills, communication style, and impact on team dynamics can influence both short-term athletic performance and long-term sustainable success.

In recent years, with the rapid increase in publications in the field of sports science, it has become necessary to systematically examine the quantitative distribution, content trends, and interaction networks of these studies. In this context, bibliometric analysis stands out as a powerful method for revealing structural patterns, collaboration models, conceptual themes, and research trends in the literature. This study was conducted within this framework and examined the place of team captaincy in the scientific literature, related concepts, publication trends, and

conceptual development using bibliometric methods in relation to sustainable success in sports teams. Thus, both the existing knowledge base was mapped and a guiding foundation for future research was established.

The main question of the research is what place team captaincy occupies in the scientific literature in the context of sustainable success and leadership in sports teams. Within this framework, the sub-research questions of the study are as follows: How do academic publications on sustainable success and team captaincy in sports teams show distribution and development over the years? Which countries are at the forefront in terms of scientific production in this field, and how are international collaboration networks structured? What are the most frequently used keywords in the literature revealing the relationship between team captaincy and sustainable success, and what is the structure of the connections between these concepts? Additionally, who are the most prolific authors in the literature, and how can author productivity be evaluated within the framework of Lotka's Law? How have research themes related to the subject evolved over time, and which themes have gained prominence? How do the conceptual structures emerging from factorial analysis explain the relationship between team captaincy and sustainable success? Finally, which trending topics are coming to the fore for future research, and what research gaps exist in the literature? Therefore, this study comprehensively analyzes the current state of sustainable success and team captaincy in sports teams in the scientific literature. This aims to identify research gaps in the field, determine emerging trends, and present data that will guide future work.

METHOD

This research was designed to evaluate the place, importance, and developmental aspects of team captaincy in achieving sustainable success in sports teams, based on bibliometric analysis. Bibliometric analysis, a field of research that quantitatively examines bibliographic references, is a research area that helps analyze current trends in the literature in a specific field and provides guidance and motivation for future research (Broadus, 1987; Muhuri et al., 2019). Bibliometric analyses are considered a useful and important method because they provide general information about various characteristics of studies published in a specific research field.

Furthermore, bibliometric studies contribute to many areas, such as identifying new research gaps, evaluating the impact of specific scientific actors, and monitoring research processes (Baier-Fuentes et al., 2020). In this context, the study's dataset was created using the Web of Science (WoS) Core Collection database, with the aim of including only qualified publications and evaluating subject-specific literature. The data collection process was carried out between July and August 2025, and an advanced search strategy was developed using Boolean operators (AND, OR) to identify studies within the scope of the research. At this point, a screenshot of the advanced search in WoS is presented in Figure 1.

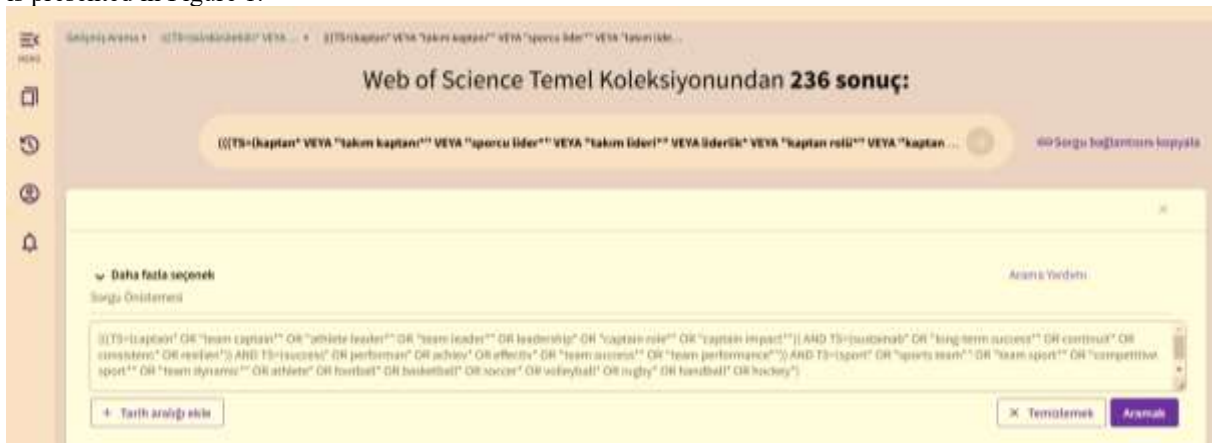


Figure 1. WoS Search Screen Shot

The analysis process was conducted using VOSviewer and the Bibliometrix R package, which are software tools specific to bibliometric data analysis. The main parameters evaluated in the study include: publication numbers by year, countries' scientific production levels, international collaboration networks between authors, thematic evolution analysis, factorial analysis, word clouds, trending topics, frequency of words over time, and author productivity analysis based on the Lotka Law using a co-occurrence network. All of these analyses were conducted with the aim of comprehensively revealing the scientific production dimensions of the subject, defining the structure of the research field, and identifying trends that will guide future studies.

However, as with any scientific study, this research has certain limitations. First, since the data was obtained solely from the Web of Science database, studies found in other data sources were excluded. The search language was limited to English, restricting access to studies conducted in other languages. Despite all these limitations, the research comprehensively presents the development of academic production on the subject, international collaborations, conceptual network structures, and thematic areas that will guide future research by revealing how the phenomenon of team captaincy is positioned in the scientific literature in terms of achieving sustainable success in sports teams.

FINDINGS

This section comprehensively examines sustainable success in sports teams and the place of team captaincy in the scientific literature. At this point, the distribution and development process of the literature over the years has been examined, revealing the trajectory of academic production on the subject over time. Furthermore, the leading countries in the field and the scientific collaboration networks between these countries have been evaluated. In addition, the frequency of use and conceptual relationships of keywords related to team captaincy and sustainable success have been analyzed. The most productive authors in the literature have been identified, and author productivity has been evaluated within the framework of Lotka's Law.

In addition, methods such as thematic evolution and factorial analysis were used to reveal changes in research themes related to the subject over time and conceptual structures. Finally, trend topics and research gaps were identified to guide future research, and sustainable success in sports teams and the importance of team captaincy were comprehensively mapped from a scientific perspective. The main findings obtained within the scope of this study are presented in Figure 2.

Time Interval 1992:2025	Sources 166	Documents 236	Annual Growth Rate
Authors 848	Single-Author Documents 23	International Co-Authors %0	Co-author per document 3.88
Author's Keywords 870	References 11695	Average Age of Documents 4.72	Average Citations per Document 0

Figure 2. Key Information

As shown in Figure 2, a bibliometric analysis spanning from the first study published in 1992 to 2025 examined a total of 236 documents on sustainable success in sports teams and the role of team captaincy. These studies were calculated to have an annual growth rate of 12.07% across 166 different scientific sources, indicating that the field is rapidly expanding in terms of academic interest. The average age of the documents is 4.72 years, suggesting that the literature remains up-to-date. A total of 11,695 references were used in the analyzed documents.

The average number of citations per document being zero suggests that studies that are still in the process of receiving citations or have been recently published are predominant. In the study, 870 different keywords were used by the authors, and 610 different keywords were used overall. The literature, which includes a total of 848 authors, has a dense collaboration network, with an average of 3.88 co-authors per document and only 23 single-authored documents. These data reveal that the field of sustainable success in sports teams is advancing through teamwork and has attracted increasing academic attention in recent years. The number of publications obtained within the scope of this study is presented in Figure 3.

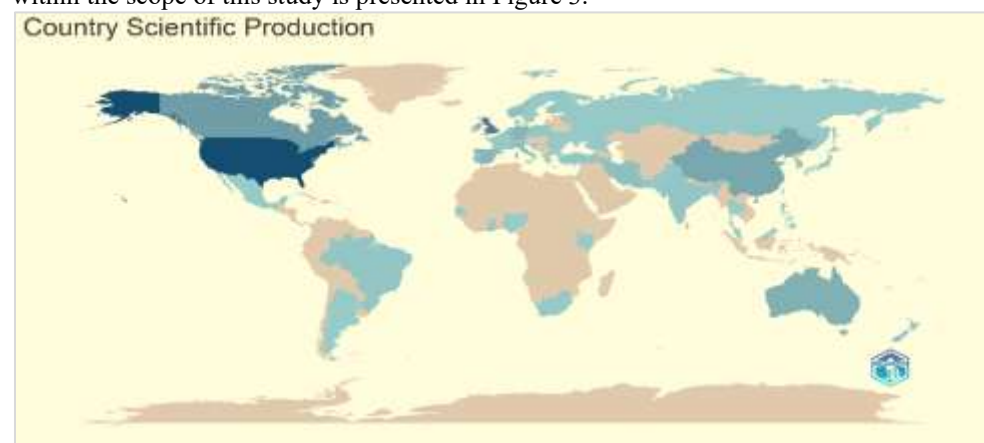


Figure 3. Countries' Scientific Output

As shown in Figure 3, scientific production has been carried out by the United States (n=49), the United Kingdom (n=32), and Canada (n=18). These three countries lead the field academically, accounting for a significant portion of total publications. China (n=14) and Australia (n=11) are among the other notable countries in the Asia-Pacific region. In Europe, countries such as Germany (n=9), Spain (n=8), and Italy (n=7) stand out. Turkey (n=3) is among the countries contributing to the subject; however, the number of publications remains low. The findings show that developed countries produce more intensively in this field and that team captaincy has found its place on the academic agenda in the context of leadership and performance sustainability. At this point, the network of co-authors obtained within the scope of the study is presented in Figure 5.

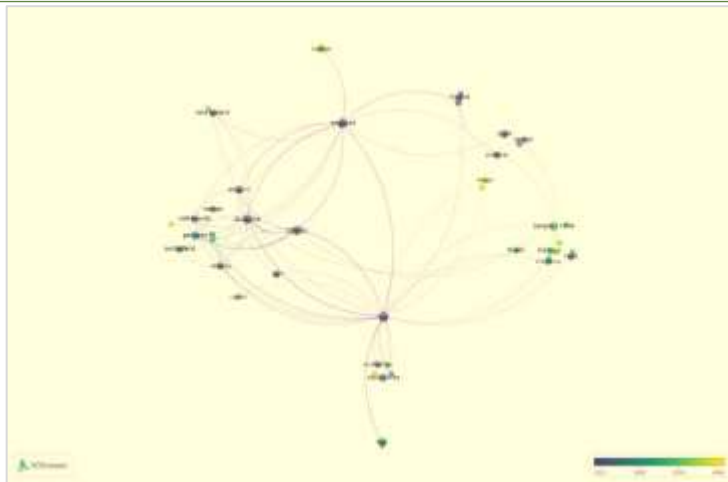


Figure 4. Network of Co-Authors by Country

As shown in Figure 4, studies on sustainable success and team captaincy in sports teams consist of 45 nodes, 10 clusters, 91 connections, and 148 total connection strength. Based on the total connection power values of the co-authors, the studies were found to have taken place most frequently in the United States (total connection power = 46), the United Kingdom (total connection power = 30), and Australia (total connection power = 29). Canada (total connection strength = 27), Germany (total connection strength = 21), and Norway (total connection strength = 15). At this point, the thematic evolution map obtained within the scope of the study is presented in Figure 6.

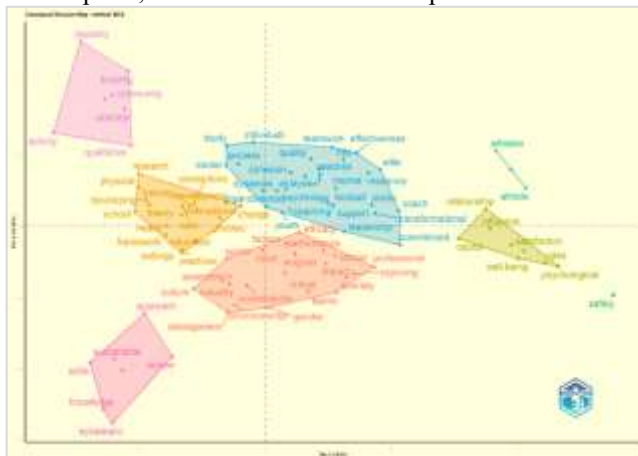


Figure 5. Factorial Analysis

As shown in Figure 5, the key concepts used in the studies have been grouped under eight different clusters (groups). The most intense clustering is seen in the first cluster, which includes concepts such as leadership, team, resilience, work, coaching, organizational, coaches, model, coach, elite, perspective, harmony, commitment, effectiveness, teamwork, support, mental, and psychology. This situation shows that team captaincy, leadership, and team dynamics are strongly related to each other in the literature and are at the center of research. The second cluster includes concepts such as sports, performance, management, teams, sustainability, impact, discovery, culture, diversity, and environment, focusing on the dimensions of sports management, performance, and sustainability. These concepts reveal that team captaincy is addressed in relation to organizational structure and cultural diversity. The third cluster includes concepts such as physical, health, education, training, framework, application, change, school, and practices. This cluster represents physical activity, education, and practice-based studies. This finding shows that team success is supported not only by psychological and managerial factors but also by physical and educational elements.



Figure 6. Word Cloud

As shown in Figure 6, leadership has been the most frequently encountered concept in achieving sustainable success in sports teams. This highlights how central the role of team captaincy is in terms of sustainable success

and that the concept of leadership is one of the most emphasized themes in the literature in this context. Team captains stand out not only for their in-game guidance but also for their leadership behaviors that shape the cultural and psychological structure of the team. The concept of leadership is followed by sustainability, sports, team dynamics, and resilience. These concepts show that team captains have the potential to bring not only short-term success to their teams, but also long-term stability and harmony. Strong team dynamics are directly linked to the captain's ability to demonstrate effective leadership.

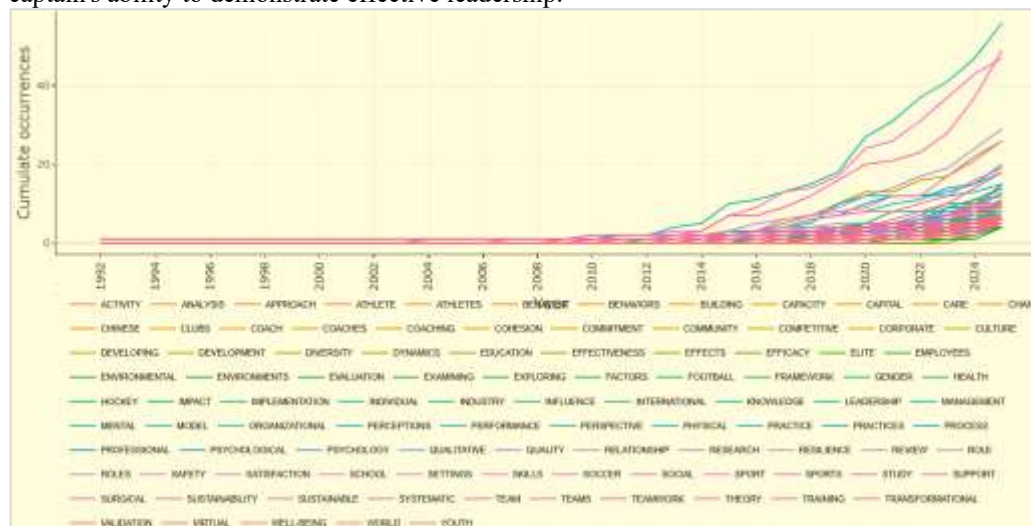


Figure 7. Frequency of Word Change Over Time

As shown in Figure 7, although team captaincy received limited attention in sports science literature for a long time, academic interest in this concept has increased significantly since the early 2000s. The phenomenon of captaincy, which was only indirectly addressed in a few studies per year in the 1990s, began to be examined more systematically in the context of leadership, motivation, team dynamics, and athletic performance starting in the 2010s. Particularly in the post-2020 period, the role of team captains as a leadership tool contributing to sustainable success has been evaluated through more comprehensive theoretical and empirical analyses. The increase observed in the frequency of concepts such as leadership, organizational effects, team environments, evaluation, and competitive clubs in studies published in recent years clearly demonstrates this trend. These data show that the position of captain is not only a symbolic representation but also positioned as a strategic factor for organizational success.

This analysis, covering 848 written documents, shows that single-authored works number 802, accounting for 94.6% of all authors. The proportion of two-authored works is 3.9%, while the proportion of works with three or more authors is only 1.5% cumulatively. This finding reveals that scientific production in the relevant field is largely single-authored.

CONCLUSIONS AND RECOMMENDATIONS

The bibliometric analysis conducted within the scope of this study reveals that academic output on sustainable success in sports teams and the role of team captaincy is steadily increasing, indicating that the field is undergoing a dynamic development process. The 236 documents examined comprehensively reflect the multidimensional relationship between team captaincy and leadership, psychological resilience, team dynamics, and sustainable success.

The prominence of the concept of leadership as the central theme in the literature shows that team captains are not only leaders in on-field performance but also critical actors who shape the social, psychological, and cultural structure of the team. Furthermore, the continuity of concepts such as burnout, psychological safety, and teamwork supports the idea that the role of captaincy is an indispensable element in sustainable success.

The analyses revealed that captaincy is also effective on the field, demonstrating an active role in increasing team motivation, encouraging innovation, and maintaining team harmony. In this regard, there are significant parallels between our findings and the qualitative study conducted by Gökdoğan et al. (2023). This study demonstrated that captains, in addition to their on-field leadership roles, play critical roles in team psychosocial and cultural regulation in their off-field practices.

In particular, captains' role as intermediaries in team communication, their active involvement in increasing motivation and maintaining team spirit aligns with the themes of leadership and social structure emphasized in this study. Furthermore, findings regarding captain selection processes demonstrate that the role of captain is based not only on athletic performance but also on psychosocial resilience and team acceptance, supporting the need for a multidimensional and interdisciplinary approach to addressing the issue. Thus, this field-based, qualitative study, supported by bibliometric data, provides a solid foundation for this research.

Within the scope of this study, the theme of leadership, addressed under different subheadings at different times and its low consistency, highlights the need for more systematic and consistent research in this area. In recent

years, the importance of environmental and technological factors has increased in pursuit of sustainable success goals in sports (Dertli and Erden Dertli, 2025a). Dertli and Erden Dertli (2025b) examined the academic literature on green sports technologies using comprehensive science mapping techniques, highlighting the rising trend in environmental sustainability and innovation in the sports industry. In this context, they demonstrated that sustainable sports practices not only reduce environmental impacts but also possess a strategic dimension that supports team performance and success.

Within the scope of this study, the theme of leadership, addressed under different subheadings at different times and its low consistency, highlights the need for more systematic and consistent research in this area. In recent years, the importance of environmental and technological factors has increased in pursuit of sustainable success goals in sports (Dertli and Erden Dertli, 2025a). Dertli and Erden Dertli (2025b) examined the academic literature on green sports technologies using comprehensive science mapping techniques, highlighting the rising trend in environmental sustainability and innovation in the sports industry. In this context, they demonstrated that sustainable sports practices not only reduce environmental impacts but also possess a strategic dimension that supports team performance and success.

Therefore, integrating technological advancements and environmental awareness into leadership and team dynamics stands out as a critical approach to achieving sustainable success in sports teams. In this regard, the integration of technology-supported leadership practices into the captaincy role in sports teams stands out as a significant gap requiring research. Therefore, the integration of digital performance analytics and communication technologies into captaincy roles are among the innovative approaches that can enhance sustainable success in sports teams. Furthermore, the lack of in-depth study of dimensions such as physical performance, education, and sports management highlights the need to broaden the field with an interdisciplinary perspective.

While developed countries appear to be leading the field, the limited scientific production in countries like Turkey demonstrates the need for increased local and regional original research. In this context, it is crucial that future studies focus on the integration of technological advancements into captaincy and leadership processes, psychosocial resilience mechanisms, the impact of cultural differences on teams, and the training processes of captains. Therefore, it is recommended that future studies focus on topics such as the psychosocial resilience of captains, the impact of cultural differences within teams, the training processes of captains, and technology-supported leadership models.

Future studies focusing on the role of team captaincy in sustainable success in sports teams should not rely solely on analyses based on a single database; instead, it is recommended that various academic databases such as Scopus, PubMed, Google Scholar, and YÖKTEZ be incorporated into the bibliometric analysis process. Consequently, team captaincy plays a crucial role as a multidimensional and strategic leadership role in ensuring sustainable success in sports teams.

Research Ethics

As stated in the study conducted by Özlekli (2025), this research was conducted in accordance with scientific ethical principles. Data were obtained from the publicly available Web of Science database, and publications containing no personal data were analyzed. The data was used as is in the study, with no manipulation or modification. All sources were cited in accordance with academic citation rules. Because it did not involve any experimental study with human participants, ethics committee approval was not required.

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