

# Mapping the Football Tourism for Sustainable Development Goals: A Bibliometric Approach to Understand Research Agenda

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## Abstract

This study seeks to create knowledge maps of football tourism with the goal of fostering sustainable development. Furthermore, it aims to introduce this field's research agenda in order to contribute to the sustainable future of football development. Examining 111 publications on football tourism and sustainable development from the Web of Science database between 2014 and 2024, we employ bibliometric analysis methods within CiteSpace software to uncover collaborative relationships among authors, institutions, and countries, as well as to identify research trends through keyword analysis. The findings reveal that scholars like Daddi, Tiberio, Hunt, Kate, Wyke, Sally, and Kellison have significant contributions in the field, working closely together in various research teams. These institutions are pioneers in this field. The United States, the United Kingdom, and Germany have a wealth of research outputs and maintain strong collaborations with other countries, holding prominent positions in the network. There is a wide range of topics covered in football tourism and sustainable development research, such as sustainable development goals, carbon footprint, environmental management in professional football, university sports, and circular economy. Lately, there has been a growing focus on the practical aspects of sustainable football tourism. This includes exploring ways to engage audiences, manage resources effectively, and implement the UN Sustainable Development Goals. Future research directions include improving global collaboration, encouraging knowledge exchange and resource integration, and investigating the use of cutting-edge technologies in football tourism.

**Keywords:** Sustainable Development Goals, Football Tourism, Knowledge Map, Keyword Analysis, International Cooperation, Bibliometrics, Research Agenda.

## Introduction

Football tourism is a fascinating blend of sports and travel, offering numerous developmental advantages (Van Rheenen et al., 2021). The 2022 FIFA World Cup in Qatar had a significant impact on the local economy, with up to \$20 billion in economic contributions. The infrastructure developments carried out for the event primarily contributed to this. These developments led to the creation of around 1.5 million jobs in sectors such as construction, real estate, and hospitality, showcasing a significant impact on Qatar's non-hydrocarbon economic sectors (Khalifa, 2020). The event drew in approximately 1.5 million visitors, which is more than half of Qatar's average population. The aim of this significant increase in tourists and international recognition was to bolster Qatar's reputation and foster economic diversification, aligning with its National Vision 2030 (Gray, 2021).

The IMF primarily focused on expanding the tourism and hospitality sectors, leveraging recently constructed infrastructures like stadiums and cultural venues (Rogerson, 2020). The IMF projected that the World Cup

would positively impact Qatar's economy, resulting in an initial annual growth rate of 3.4%. However, Quamar et al. (2023) expects this growth to taper off by 2024. The long-term advantages, highlighted by investments in overall infrastructure and enhanced global recognition, are critical for Qatar's broader economic strategies beyond the hydrocarbon sector (De Jong et al., 2019). In addition, cities such as Manchester, Barcelona, and Milan have gained worldwide recognition for their prominent football matches, greatly influencing urban development. Manchester has witnessed the power of football as a driving force behind tourism and economic development. Barcelona's Camp Nou is a renowned sports venue that attracts a large number of visitors, making a substantial contribution to the city's economy. In the same way, Milan's football legacy, which is divided between AC Milan and Inter Milan, has boosted its worldwide reputation, attracting tourists and foreign investments (Tobar & Ramshaw, 2022).

Football tourism for sustainable development involves maximising economic benefits while also addressing

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environmental and social challenges (Daddi et al., 2022). Football tourism faces sustainability challenges, including the ecological consequences of building stadiums and handling large crowds, which result in substantial waste and carbon emissions. However, it is clear that football tourism plays a significant role in stimulating economic growth through job creation, supporting local businesses, and fostering cultural exchange. These factors are critical for urban development and local community revitalization (Vrondou, 2023).

Football stadiums play a crucial role in football tourism (Edensor et al., 2021). In football tourism, revenue generation includes various aspects such as merchandising, broadcasting rights, and fan experiences like stadium tours and match-viewing packages (Henderson, 2010). Nevertheless, the progress of football tourism continues to encounter obstacles in terms of sustainability. It is essential to prioritise infrastructure sustainability and cultural integration in emerging football tourism cities such as Nashville and Doha (Sharma & Rudkin, 2020). Recognizing the complex relationship between economic, environmental, and social factors is critical. Therefore, placing emphasis on football tourism for sustainable development is crucial (Hazaa et al., 2021; Lobillo Mora et al., 2021a, 2021b).

Sustainable tourism development aims to ensure that tourism has positive social and economic impacts while minimising harm to the natural environment and maximising benefits for a wide range of people. Khan et al. (2021) underscores the significance of upholding a harmonious balance among economic revenue, environmental conservation, and social equity. In addition, this area of study focusses on examining the long-term competitiveness of tourism. This is crucial for destinations aiming to improve their market standing through sustainable development initiatives. Such initiatives involve promoting innovative practices that contribute to environmental conservation and address social concerns (Cardoso, 2020).

A comprehensive analysis spanning from 2002 to 2019 has explored the trends in this particular field of research. The primary focus of this analysis has been on the effects of mega sporting events and the rise of sustainable development goals (SDGs) (Oliveira et al., 2021). The field of sports tourism has adapted to meet changing sustainability standards, while also recognizing the need for further research in education and destination management (Della Corte et al., 2021). The integration of sports tourism with sustainable practices is continuously evolving and remains highly significant, with a strong emphasis on the sustainable development of sports tourism to meet both local and global objectives (Cury et al., 2023).

The concept of sports tourism for sustainable development (STSD) focusses on implementing sustainable principles in sports travel and related events. This approach aims to create a framework that promotes social, economic, and environmental sustainability in destination development. By adopting this approach, destinations can ensure long-term benefits for both tourists and sports stakeholders while also supporting the economic sustainability of the area. STSD involves effectively coordinating the processes related to sports events and tourism to achieve sustainability objectives, such as reducing environmental impacts, promoting community engagement, and preserving cultural and biological diversities (Pei Diao & Jiang, 2023). Notable progress has been made in setting up sustainable guidelines and standards for sports events, increasing awareness and understanding of sustainability among sports event stakeholders, and implementing economically advantageous, environmentally friendly best practices that promote equal opportunities for all (Hugaerts et al., 2021). Nevertheless, there is a growing emphasis on evaluating the effects of sports tourism on social and environmental outcomes to assess its advantages for the host communities and the surrounding environment (González-García et al., 2022).

However, despite the increasing interest in this field, there remains a significant amount of exploration to be done in the analysis of football tourism for sustainable development. Researchers are currently in the process of determining the outcomes of bibliometric analysis on this subject. In this study, we will delve into the developmental trends of this particular topic. Our focus will be on mapping the collaborative knowledge networks among authors, institutions, and countries. It will also explore the co-occurrence of keywords, conduct cluster analysis, and analyse bursts to highlight important discoveries in the field.

## Literature Review

### Emerging Dynamics of Football Tourism: Environmental, Cultural, and Economic Perspectives

Football tourism is a growing sector of the tourism industry, known for its ability to combine travel with sports entertainment. Football tourism encourages potential collaborations within regional economic groups such as the Vise grad and drives innovation through interdisciplinary approaches (Fawn, 2009). Enhance our knowledge by delving into sensory experiences, like the auditory aspects of televised matches and their nuanced yet significant impact on the football tourism experience (Battour et al., 2023). The observations together highlight the intricate relationship between football as a sport and its wider

cultural and economic effects on tourism.

Recent research has placed a significant emphasis on the carbon footprint associated with football game days in Tennessee, specifically focussing on the environmental sustainability of football tourism (Cooper, 2020). Broader discussions surrounding the sustainability of sports tourism reflect concerns about the environmental impact of major sporting events. In addition, the global appeal of football and its ability to contribute to cultural sustainability in top leagues, while also benefiting the hosting city's socio-economic structure, is an important factor to take into account (Michael E Tobar et al., 2022).

The infrastructural and developmental aspects of football tourism are important to consider, as they have significant implications for the potential of sports tourism. Similarly, groundhopping provides valuable insights into the dynamics of football tourism, appealing to fans who seek authentic experiences and a deeper understanding of different sporting events. Utilising bibliometric methods, which reveal the dynamics and trends in this research area, provides a systematic literature review that directs research direction and informs policymaking in this rapidly expanding tourism subsector.

### **Sport Tourism for Sustainable Development: An Academic Review**

The concept of sports tourism for sustainable development involves utilising sports-related activities to stimulate economic growth, protect the environment, and foster social equality in the communities where they take place (Raso and Cherubini, 2024). The role of STSD is illustrated by highlighting specific events, such as the Banyuwangi Festival and the Winter Olympic Games, that have made significant contributions to sustainable tourism (Kline et al., 2021). These events not only provide a boost to local economies, but also prioritise minimising environmental impact and enhancing social well-being. They aim to set an example for other sporting activities to follow in their efforts to promote sustainability.

Thus, the success of enhancing sports tourism initiatives relies heavily on implementing appropriate governance frameworks (Chang et al., 2020). The argument emphasises the importance of robust government policies and effective leadership in driving sports tourism in Nigeria. It suggests that the success and effectiveness of these measures depend on well-crafted policies and capable individuals (Simango, 2022). Similarly, the developmental objectives and processes necessary for staging large-scale sports events emphasise the significance of an integrated system that involves the local business and community. This is crucial for promoting sustainable tourism in the targeted region (Jung et al., 2024; Pei Diao, 2024).

The impact of sports tourism on society and the social structure of host areas is significant (Ferrari et al., 2022). An examination is conducted into the role of sports in relation to the sombre commemorative events, with a focus on promoting the post-conflict message of unity and coexistence in the Western Balkans (Jeremic & Jayasundara-Smits, 2022). In addition, the study by Herbold et al. (2020) provides insights into how residents perceive the impacts of sustainable tourism and the potential social, cultural, and environmental transformations that may arise from such tourism activities. These studies emphasise the importance of addressing and managing the social dynamics and perspectives of the residents in order to ensure the long-term viability of sports tourism.

Therefore, it is of utmost importance to thoroughly analyse the sustainability aspect of sport tourism practices to ensure their long-term effectiveness (Chersulich Tomino et al., 2020). An innovative method is presented that effectively examines the interrelationships between sports tourism and sustainable development. The study utilises pyramid visualisations to illustrate the findings (Andrade-Valbuena et al., 2022). Furthermore, a model for evaluating and recommending cities for developing sports tourism is presented, with a focus on sustainability (Heebkhoksung et al., 2023). In order to effectively plan and enhance the sustainability impact of sports tourism developments, it is crucial to incorporate innovative models and assessments (Yang et al., 2020).

Together, it provides a comprehensive academic framework for studying and promoting sport tourism in alignment with sustainable development objectives. Discussion surrounding sports tourism has been increasingly focused on adopting sustainable practices as the concept continues to evolve. Nevertheless, there seems to be a notable lack of research on football tourism in this particular context.

In academic literature, the role of football tourism in promoting sustainable development goals (SDGs) has not been comprehensively explored, despite the well-documented research on general sports tourism and its sustainable development. This study sheds light on the level of focus that has been given to this particular intersection in academic circles. It also provides valuable insights for future research directions that could assist policymakers and stakeholders in maximising the contributions of football tourism initiatives to the Sustainable Development Goals.

### **Research Method**

Bibliometric analysis is a quantitative method that relies on

mathematics and statistics to examine the external characteristics of scientific literature. This tool is highly effective for conducting quantitative analysis, allowing researchers to gain a macro perspective on the current state and future trends of a particular field of research. It provides a solid scientific foundation for making informed decisions in the scientific community (Rojas-Sánchez et al., 2023). Provide references for outer space. As a fundamental tool in bibliometric analysis, extensive progress has been made in the study of news communication. This method is also a vital approach to constructing the knowledge graph (Castillo-Vergara et al., 2023).

Therefore, the study examined 169 significant articles from the Web of Science using cite space as a basis. The study conducted a search for papers on football tourism for sustainable development using the Web of Science database and the "top" retrieval mode. The retrieval formula is:

TS= ("football tourism") AND TS= ("sustainable development")

TS= ("football tourism") AND TS= ("sustainability")

TS= ("football tourism") AND TS= ("eco-friendly development")

TS= ("soccer tourism") AND TS= ("sustainable development")

TS= ("soccer tourism") AND TS= ("sustainability")

TS= ("soccer tourism") AND TS= ("eco-friendly development")

TS=(football) AND TS= ("sustainable tourism")

TS=(football) AND TS= ("sustainable development")

TS=(football) AND TS=(sustainability)

TS=(football) AND TS=("SDGs")

TS=(football) AND TS= ("Sustainable Development Goals")

TS=(soccer) AND TS= ("sustainable tourism")

TS=(soccer) AND TS= ("sustainable development")

TS=(soccer) AND TS=(sustainability)

TS=(soccer) AND TS=("SDGs")

TS=(soccer) AND TS= ("Sustainable Development Goals")

TS= ("event tourism") AND TS=("football") AND TS= ("green development")

TS= ("event tourism") AND TS=("football") AND TS= ("environmental sustainability")

TS=("football") AND TS= ("sports tourism") AND TS= ("UN Sustainable Development Goals")

TS=("football") AND TS= ("event tourism") AND TS= ("Global Goals")

TS=("soccer") AND TS= ("sports tourism") AND TS= ("UN Sustainable Development Goals")

TS=("soccer") AND TS= ("event tourism") AND TS= ("Global Goals")

TS= ("football tourism") AND TS= ("sustainability") AND

TS= ("literature review")

TS= ("football tourism") AND TS= ("sustainability") AND

TS= ("bibliometric analysis")

TS= ("soccer tourism") AND TS= ("sustainability") AND

TS= ("literature review")

TS= ("soccer tourism") AND TS= ("sustainability") AND

TS= ("bibliometric analysis")

Using Citespace, researchers obtained a total of 111 valid documents after eliminating any duplicates. It was ensured that all the literature included in the dataset consisted solely of academic papers written in English and relevant to the research topic. Then, using the available data, the research conducted an analysis of annual publications, author cooperation, organisational cooperation, keyword co-occurrence, keyword prominence, and keyword clustering.

## Result

### Trend of Literature Publication

Figure 1 displays the publication trends regarding football tourism and sustainability over a ten-year period, from 2014 to 2024. The data indicated a significant rise in the number of studies published over the course of ten years, with a notable increase in June 2024. There has been a noticeable surge in publications in recent years, indicating a significant rise in interest in this particular field of research.

The substantial increase observed between 2018 and 2023 reflects a rise in research activity, possibly influenced by major international football events and a growing focus on the Sustainable Development Goals. The rise in publications from 2014 to 2018 suggests that the field is currently in an exploratory phase, as researchers are starting to investigate the connection between football tourism and sustainability in greater detail. The consistent increase in publications since 2018 demonstrates the development and advancement of research topics and methods. Various factors have contributed to the growth of this phenomenon, such as the increasing global emphasis on sustainable development, advancements in policies, and the adoption of sustainable practices within the tourism industry. In 2024, eleven publications have been recorded, which suggests that there is ongoing research and publishing activity. We anticipate releasing more publications in the future. External factors such as the COVID-19 pandemic may have impacted research and publishing activities. However, the increasing significance and scholarly attention towards football tourism and sustainability are evident in the upward trend observed from 2014 to 2023.



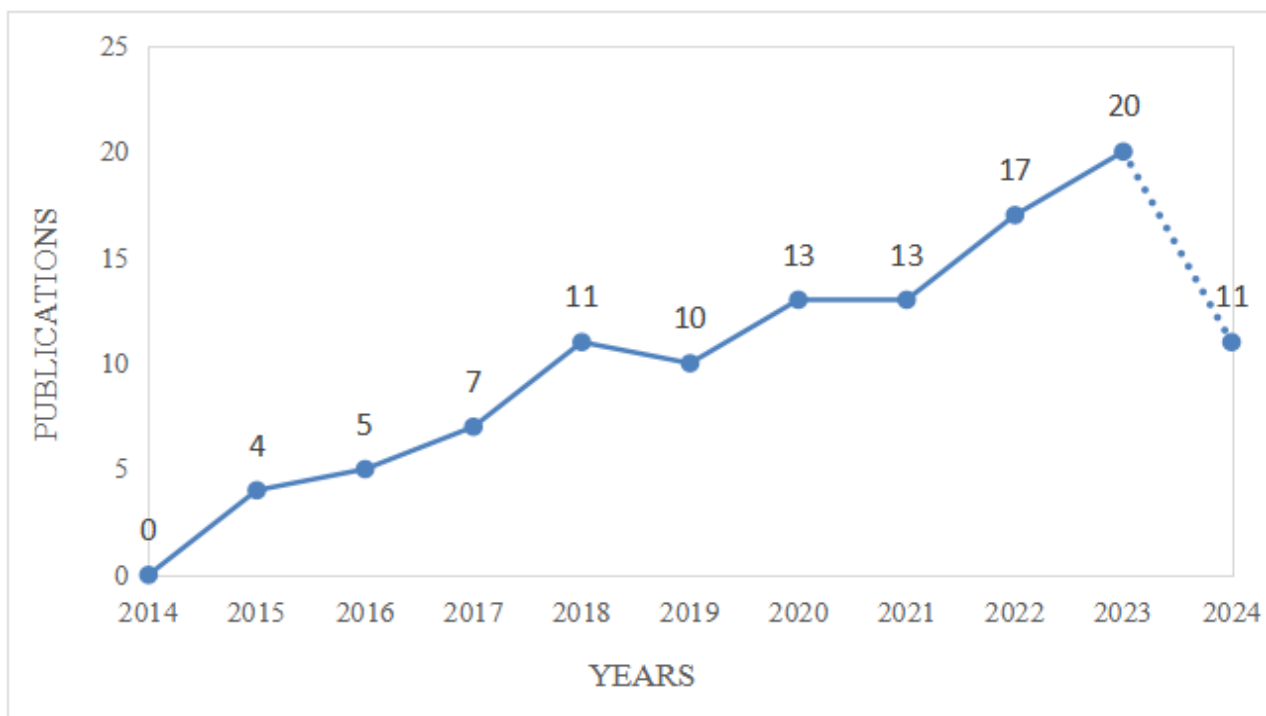


Figure 1: Research Trends in the Sustainability of Soccer Tourism (2014-2024).

### Authors Collaboration Knowledge Map

Table 1 and Figure 2 display the author's collaboration network within the realm of tourism and sustainability. The author collaborative knowledge atlas is a tool that showcases the power of collaboration among authors. It provides insights into the strength of partnerships, identifies core and edge authors, and highlights different research teams and collaboration models (García-García & Rodríguez-Salvador, 2020). The collaborative contribution map of the following authors primarily showcases their research collaboration in the field of sustainable development in football tourism. It also uncovers the level of collaboration and patterns of cooperation among various research teams in the field.

Figure 2 illustrates the key roles and positions held by individuals like Daddi, Tiberio, Hunt, Kate, Wyke, Sally, and Kellison, Timothy, highlighting their significance as central figures or influential thought leaders. The connections between these authors indicate their collaborative partnerships. Figure 2 demonstrates the presence of many closely connected collaborative clusters, indicating the strong presence of research teams and partnerships in the field of football tourism and sustainable development.

Table 1 shows that prominent individuals such as Daddi, Tiberio, Hunt, Kate, Wyke, Sally, and Kellison, Timothy, have made significant contributions to the academic discourse with their extensive body of work over the years. There has been a significant rise in the collection of

research findings since 2015, reflecting a growing interest in sustainability issues in football tourism. The recent increase in publications, especially in 2022 and 2023, highlights the urgent and relevant need for sustainable practices in this field in response to global environmental challenges.

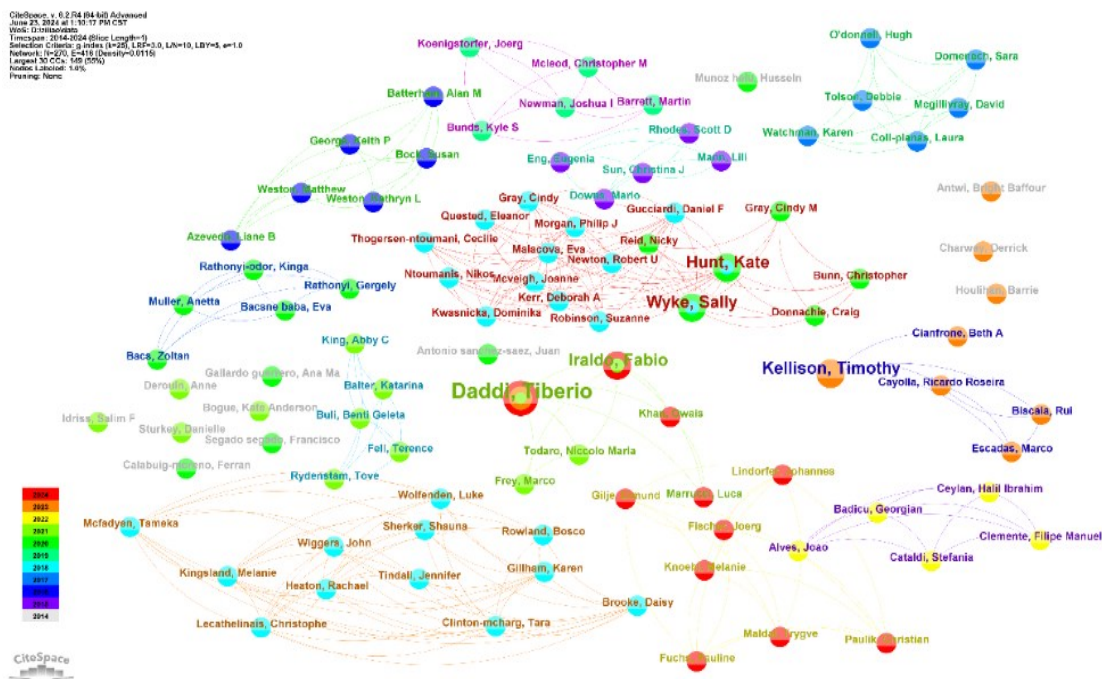
The collaborative network analysis reveals a complex web of interactions among scholars, indicating strong and dynamic partnerships. Key figures in this network, including Daddi, Tiberio, Wyke, and Sally, play crucial roles in spreading knowledge and ideologies. The emergence of collaborations, particularly involving Di Domizio, Marco and Wicker, Pamela, highlights a move towards interdisciplinary and cross-institutional research initiatives. This ever-changing collaborative dynamic not only drives creative solutions to sustainability challenges but also enriches the breadth and depth of the knowledge base in the field of football tourism and sustainable development. However, the works of these authors have a limited scope, with only 2 or 3 publications. This presents challenges in forming a strong network of research authors and a significant leadership presence in this field. Collaborations between authors continue to be widely spread out.

By analysing the data from an academic perspective, we successfully identified key researchers, evaluated the strength and depth of research partnerships, and made projections about potential future research paths and chances for collaboration.

**Table 1**

Statistics on the Published Research Results of Soccer Tourism and Sustainable Development on Web of Science From 2014 to 2024.

| Count | Year | Authors            |
|-------|------|--------------------|
| 3     | 2021 | Daddi, Tiberio     |
| 2     | 2018 | Hunt, Kate         |
| 2     | 2015 | Mourao, Paulo Reis |
| 2     | 2019 | Evans, Richard     |
| 2     | 2023 | Kellison, Timothy  |
| 2     | 2022 | Wicker, Pamela     |
| 2     | 2021 | Iraldo, Fabio      |
| 2     | 2023 | Di Domizio, Marco  |
| 2     | 2018 | Wyke, Sally        |
| 1     | 2019 | Bek, David         |



**Figure 2:** Author Collaborative Network Analysis in The Field of Soccer Tourism and Sustainability (2014-2024).

**The Institutional Collaborative Knowledge Maps**

The institutional cooperative knowledge map provides a comprehensive view of the collaboration between various institutions. It uncovers the intricate network of cooperation within the research field and highlights the pivotal research centres (Cao & Li, 2020). This study uncovers the mode of cooperation in football tourism and sustainability research and identifies the key research institutions in the field through the use of a knowledge graph.

Figure 3 displays the distribution of institutions involved in research on sustainable fashion design. Table 2 presents the top 10 research institutions based on the number of publications, highlighting their strong global presence. Prominent institutions like the University of Stirling and

the State University System of Florida are at the forefront of the field, with 5 and 4 publications, respectively, showcasing their significant contributions to its advancement. Noteworthy contributors to the field include the University of North Carolina and Texas A&M University College Station, each with three publications. These publications showcase the ongoing research and strong commitment to studying football tourism and sustainability from academic institutions around the globe. These universities have made notable contributions to research in the areas of football tourism and sustainability. Figure 3 illustrates the institutional collaboration network, showcasing the strong interconnections between research on football tourism and sustainability. Central institutions like the University of Stirling and the State University

System of Florida have fostered extensive collaborations and emerged as influential players in the network. Collaboration clusters are a clear indication of focused partnerships between institutions that share common research interests. Simultaneously, the rise of new participants, like Clemson University, showcases the growth of research networks and the growing focus on fashion sustainability issues within the academic community. The interconnected network emphasises the significance of collaboration, enabling institutions to utilise diverse expertise and resources, ultimately fostering more comprehensive and impactful research outcomes in the field of football tourism and sustainable development.

Figure 3 illustrates the connections between various institutions, highlighting the sharing of knowledge and

Table 2

List of Significant Publications in The Field of Soccer Tourism and Sustainability Research From 2014 To 2024

| Count | Year | Institutions                         |
|-------|------|--------------------------------------|
| 5     | 2016 | University of Stirling               |
| 4     | 2018 | State University System of Florida   |
| 3     | 2015 | University of North Carolina         |
| 3     | 2021 | Texas A&M University College Station |
| 3     | 2019 | North Carolina State University      |
| 3     | 2015 | Universidade do Minho                |
| 3     | 2021 | Scuola Superiore Sant'Anna           |
| 3     | 2022 | University of Bielefeld              |
| 3     | 2021 | Norwegian School of Sport Sciences   |
| 3     | 2019 | Birkbeck University London           |

Countries' Co-Occurrence Knowledge Graph

Table 3 presents the global publication volume of research on football tourism and sustainability from 2014 to 2024, along with the growth of sustainable initiatives and contributions from various countries. This data provides a comprehensive insight into the global academic activities and geopolitics of this crucial research area. The United States leads the list with 26 publications, highlighting the country's substantial impact in advancing sustainability in football tourism. Next is England, with 22 publications that highlight a significant focus on sustainable football tourism as part of wider efforts to promote economic and cultural sustainability. Germany, Australia, and Italy have contributed a significant number of publications, indicating their strong interest in this field. Eight publications from South Africa highlight the valuable contribution of African countries to this discussion. Researchers from Spain, Portugal, Norway, and Scotland have collectively published six papers each, showcasing the widespread collaboration in conducting studies on the sustainability of football tourism. These publications encompass a range of perspectives on the impact of football

collaboration in research. These connections demonstrate the level and frequency of collaboration among researchers and whether they have established research alliances or joint research teams. The distribution and changes of publishing institutions reveal the trends in research development in this field, both geographically and over time. For instance, the publications of Texas A&M University College Station are evident across various years, demonstrating the institution's ongoing involvement in this research area.

This map aims to provide a comprehensive overview of the roles and contributions of different research institutions in the field of football tourism and sustainability research. It will shed light on how these institutions influence and enhance one another's development.

tourism on sustainable development.

It is important to note that these numbers reflect the varying contribution levels in different years. As an example, the United States and South Africa experienced their highest point in 2015, England in 2016, Germany in 2019, and Australia in 2018. The temporal patterns in this research highlight the ever-changing nature of research priorities and funding, ensuring that the audience stays informed about the evolving landscape of the field.

Figure 3 illustrates the centralities and shifts in the roles of specific countries in the global cooperation network on research related to football tourism and sustainability. The diagram shows that the USA and England are positioned at the heart of the network, with the most prominent nodes indicating their prominent role in collaborative research. In addition to the USA and England, other countries such as Germany, Australia, Italy, and South Africa have a higher number of nodes, suggesting their significant involvement in this field. The network diagram illustrates multiple countries, indicating the global nature of this area of study. The participation of countries from Europe, North America, Oceania, Asia, and Africa indicates that the

research topic of football tourism and sustainability has a global reach. The use of different colours to represent earlier and recent years also reflects the evolution of the research collaboration network.

Research on football tourism and sustainability extends beyond local or regional boundaries. Several countries, such as the UK and the USA, are confronted with this global challenge. Researchers advance this field through global collaboration, with broad international involvement from various regions. The widespread nature of the research contributes to its involvement in a worldwide effort to promote sustainable football tourism. The participation of all these countries highlights a collaborative approach to the global conversation on sustainable football tourism. Collectively, these contributions highlight and disseminate global initiatives and experiences in sustainability, cultivating a feeling of solidarity and common objective in incorporating sustainable values into tourism.

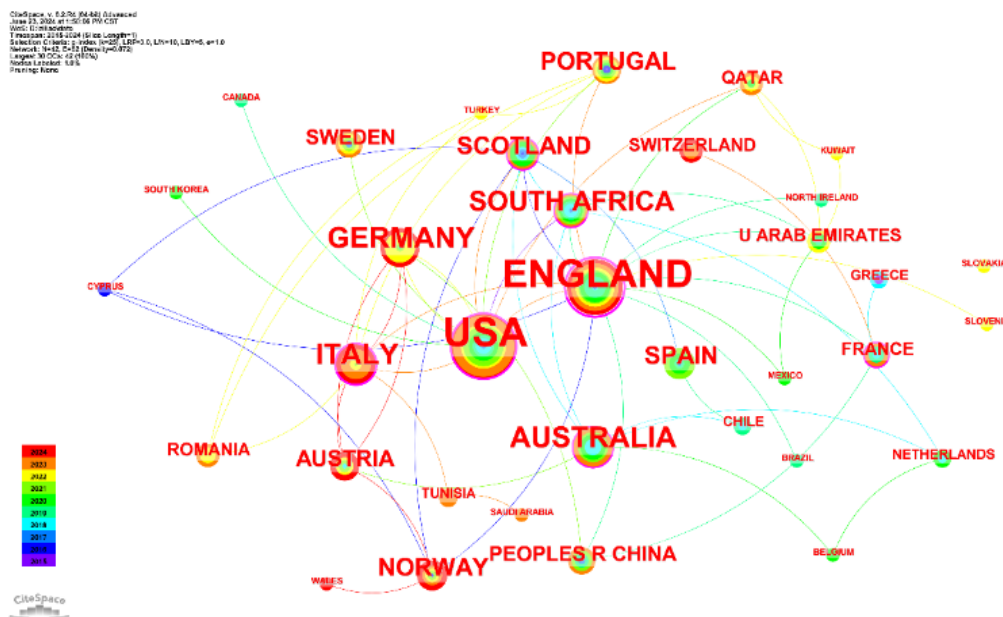
Table 3 and Figure 4 illustrate a comprehensive analysis of the global landscape in football tourism and sustainable research. This landscape indicates that countries around the world are actively pursuing sustainable development

goals, regardless of their level of development or cultural orientation. There is a strong focus on promoting sustainable tourism. The collaborative efforts of scholars in this field demonstrate a shared responsibility to address environmental, ethical, and economic challenges, with a focus on promoting sustainability and fairness.

**Table 3**

*Major Publishing Countries in The Field of Soccer Tourism and Sustainability Research In 2014-2024*

| count | Year | countries    |
|-------|------|--------------|
| 26    | 2015 | USA          |
| 22    | 2016 | ENGLAND      |
| 9     | 2019 | GERMANY      |
| 9     | 2018 | AUSTRALIA    |
| 9     | 2021 | ITALY        |
| 8     | 2015 | SOUTH AFRICA |
| 6     | 2017 | SPAIN        |
| 6     | 2015 | PORTUGAL     |
| 6     | 2016 | NORWAY       |
| 6     | 2016 | SCOTLAND     |



**Figure 4:** National Co-Present Map in the Field of Soccer Tourism and Sustainable Development (2014-2024).

**Keyword Co-Occurrence Knowledge Graph**

Understanding the relationship between themes and concepts within the research field is essential, and one way to achieve this is through keyword co-occurrence analysis (Yuan et al., 2022). Table 4 presents the publication frequency, centrality, and year of occurrence for keywords with a frequency of 5 or more. Meanwhile, Figure 5 displays a visual knowledge map of these keywords in the research

literature.

Table 4 presents a thorough analysis of the most frequently used words and their relationships in the research area of football tourism and sustainable development. The data is derived from the Web of Science database spanning from 2014 to 2024. The most frequently mentioned term in this analysis is "performance," which appears 14 times. This suggests that the field of study is centred around evaluating



the performance of different aspects of football tourism. Likewise, the recurring mention of "sport" (14 times) and "football" (13 times) underscores the central themes that propel this area of study. The frequent mention of "corporate social responsibility" (9 times) indicates a growing interest in exploring the social and ethical implications of football tourism. Specifically, it highlights the importance of companies addressing sustainable development concerns.

Figure 5 visually represents the relationship between these concepts as a network. Every node represents a particular concept, and the size of the node reflects how often it is used. The strength of the co-occurrence relationship between the keywords is indicated by the thickness of the connecting line, which demonstrates their frequent appearance together in research articles. The lines in this visualisation display a colour gradient that transitions from purple to red, representing the progression of these relationships over time.

The figure demonstrates the close relationship between "performance," "impact," and "sustainability" with other important factors like "management" and "governance." This highlights their significance as interconnected key research themes in this field. The close relationship between football clubs, governance, and management suggests that research should prioritise examining the role of football clubs in sustainable development and effective management practices. There is a clear connection between education, behaviour, and interventions, suggesting a rising interest in promoting sustainable football tourism through educational and behavioural approaches.

This chart illustrates a network that has become more intricate in the field of research on football tourism and sustainable development. Previous studies primarily examined fundamental concepts and consequences, whereas contemporary research places greater emphasis on corporate social responsibility, governance, and targeted interventions.

Figure 5 provides a clear illustration of the relationship between keywords in football tourism and sustainable development research in recent years. These trends suggest a growing focus on sustainable development and impact assessment in these fields. They also demonstrate the ongoing evolution of the research field, as new topics and research directions continue to emerge.

Table 4

Analysis of High-Frequency Keywords of Soccer Tourism and Sustainable Development Research in Web of Science (2014-2024)

| Count | Year | Keywords                        |
|-------|------|---------------------------------|
| 14    | 2016 | Performance                     |
| 14    | 2019 | Sport                           |
| 13    | 2015 | Football                        |
| 9     | 2016 | Corporate social responsibility |
| 9     | 2016 | Management                      |
| 9     | 2015 | Impact                          |
| 8     | 2016 | Sustainability                  |
| 6     | 2018 | Business                        |
| 5     | 2019 | CSR                             |
| 5     | 2017 | education                       |

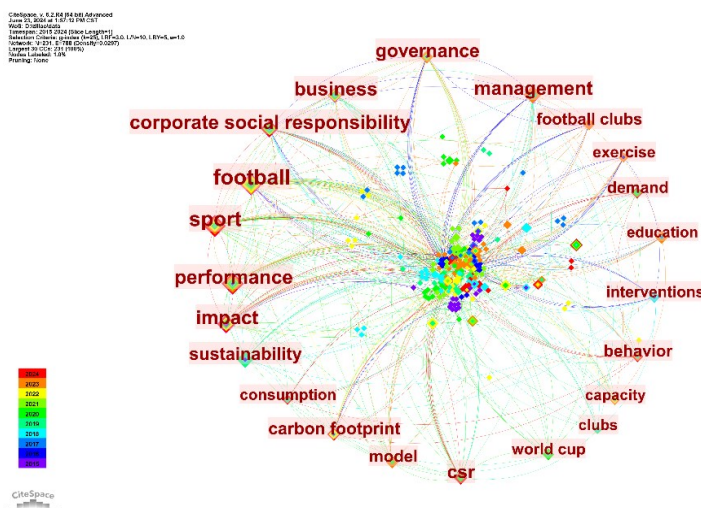


Figure 5: Keyword Co-Occurrence Knowledge Graph (2014-2024).

Keyword Cluster Map Analysis

Cluster analysis is a valuable tool in academia for organising and identifying key topics and research areas

within a field of study. By analysing the keywords found in the literature, researchers can gain insights into the most relevant and trending topics, as well as the overall research

direction. Analysing clusters of keywords in bibliometrics can be highly advantageous in identifying gaps in current research, uncovering potential new avenues for future studies, and fostering collaborative research across different disciplines (Ezugwu et al., 2021). Table 5 presents the clustering of keywords in research on tourism and sustainable development. It includes the serial number, name, and corresponding keywords for each cluster. The clusters indicate that the research field encompasses a range of themes and explores various topics. The topology illustrates how these topics are interconnected at the keyword level.

Cluster 0: Diaspora (2018) focusses on topics such as SDG (for sustainable development goals) and sustainable tourism. Here, there is a clear focus on the context of sporting events in the Western Balkans and the exploration of applying the principles of sustainable development. Additionally, it addresses the issue of almanacks for elite athletes after they retire, specifically focussing on the long-term viability of career transition and termination.

Cluster 1: The focus of Sensitivity Analysis (2019) is on practical applications, including assessing the environmental impact on sports facilities, utilising life cycle assessment, and exploring the potential of scientific assessment tools to enhance the sustainability of Football Clubs and venues. It also highlights the importance of corporate social responsibility and the need for management to adapt and evolve.

Cluster 2: The focus of Carbon Footprint (2020) is to minimise the environmental impact of an event while still maintaining spectator interest and competitive fairness. This calls for the integration of sustainable development techniques in event management.

Cluster 3: The topic of Professional Football (2020) explores the intersection of professional football and environmental management. It delves into the relationship between environmental management and the sport ecology of professional football, as well as the influence of stakeholder pressures and patronage intentions. This cluster also focusses on management and organisational change in football clubs, emphasising the importance of corporate social responsibility and environmental management to promote sustainable development in football organisations.

Cluster 4: Collegiate Sport (2020) delves into topics such as sport finance and college football, examining the financial model and ecological footprint of college sports. The book specifically homes in on the economic impact of college football and luxury suites. Collegiate Sport delves into the intersection of financial planning and environmental conservation in order to promote sustainable development

among collegiate athletes. The research focusses on the impact of fans and the sports environment.

Cluster 5: Effectiveness (2017) is a theoretical concept and a practical tool for local community development, particularly in copper mining areas. The concept offers valuable insights into how important stakeholders can contribute to the attainment of sustainable development goals, especially in areas where the preservation of the environment and the well-being of the community come together.

Cluster 6: Recycled Aggregates (2020) encompasses the principles of the circular economy, as well as the concepts of recovery and recycling. Research in this cluster centres around the management of construction and demolition waste and the circular economy, with a specific focus on recycled aggregates and recycling practices in Qatar. Recycled aggregates prioritise the implementation of circular economy models to address the issue of construction waste, with a strong emphasis on efficient resource optimisation and recycling.

Cluster 7: The topic of Sport for Development (2020) encompasses a global perspective, particularly focussing on the sustainability of financial resources. This cluster explores the concept of financial sustainability in the Global South and the work of NGOs, emphasising the importance of collaborative partnerships and pedagogical management in sustainable development processes. Exploring the intersections of sport and development, this field also delves into the effects of public pedagogy and spatial theory on promoting development in regions of the world that are considered economically disadvantaged. This includes efforts to enhance financial sustainability.

Cluster 8: Prevention (2016) involves engaging in research and addressing the issue of HIV. The analysis primarily examines participatory research in the United States, with a specific focus on HIV interventions and prevention. This study focusses on the importance of implementing prevention and intervention programs that can improve population health. It highlights the crucial role that communities play in the success of these programs.

Cluster 9: The focus of New Service Development (2015) is on the development of new services and the support of sponsorships. This cluster has a strong focus on professional services, particularly in the field of business-to-business marketing in sports. This study examines the three main elements of new service development and their impact on the sports industry, with a focus on creativity and innovation in business models.

Cluster 10: Elite Sport Training (2021) features China's involvement in the Olympic Games. The main topics revolve around the China Olympic Games and elite sports

training, with a particular emphasis on organisational change and Integrative Change Models. The study centres on enhancing training effectiveness and competition results among chosen athletes, with a primary focus on long-term strategies for enhancing performance in major sporting events.

Cluster 11: The book *Sports Tourism and Events* (2015) includes references to South Africa and the World Cup. This cluster focusses on tourism, particularly highlighting important events in South Africa such as the Sochi Olympics in 2010, as well as the development of tourism in the region. This study delves into the potential impact of public service announcements (PSAs) on tourism and the economic dynamics of a region. It examines the role of events in the overall development and sustainability of the region.

**Table 5**

*Keyword Cluster Analysis in The Field of Soccer Tourism and Sustainable Development: Web of Science Data Perspective (2014-2024)*

| Cluster Id                | Top terms (LSI)   |
|---------------------------|---|
| Diaspora                  | Sustainable Development Goals; Sustainable Tourism; Dark Events; Western Balkans; Sport Events.   |
| Sensitivity analysis      | Natural Grass; Sports Pitch; Anticipatory; Life Cycle Assessment; Endpoint Analysis.  |
| Carbon footprint          | Carbon Footprint; English Premier League; Sporting Events; Ecological Sustainability; Competitive Balance.  |
| Professional football     | Professional Football; Environmental Management; Sport Ecology; Stakeholders Pressures; Patronage Intentions.   |
| Collegiate sport          | Sport Finance; Luxury Suites; College Suites; College Football; College Athletics.  |
| Effectiveness             | Collaborative Adaptive Management; Stakeholder Engagement; Corporate Social Responsibility; Copper Mining; Local Community.   |
| Recycled aggregates       | Construction And Demolition Waste; Circular Economy; Solid Waste; Qatar; Recycled Aggregates; Recovery and Recycling.   |
| Sport for development     | Global South; Financial Sustainability; Stakeholder Theory; Non-Governmental Development Organizations; Collaborative Partnerships.   |
| Prevention                | Participatory Research; United States; Intervention; Prevention; HIV.   |
| New service development   | Professional Services; Sport; Business-To-Business Marketing; New Service Development; NSD Process; Sponsorships.   |
| Elite sport training      | China; Olympic Games; Elite Sport Training; Organizational Change; Integrative Change Model.  |
| Sports tourism and events | Tourism and events in South Africa; Sports mega-events and tourism development; Sports tourism and events; Recurring sports events and tourism development; 2010 World Cup. |

Figure 5 presents the cluster map, illustrating the connections and popular research areas within the field of football tourism and sustainable development. The map illustrates the connection between different clusters using colour and connecting lines. Each cluster represents a specific research topic or field, while the keywords within the cluster represent the specific research directions or focusses within that topic.

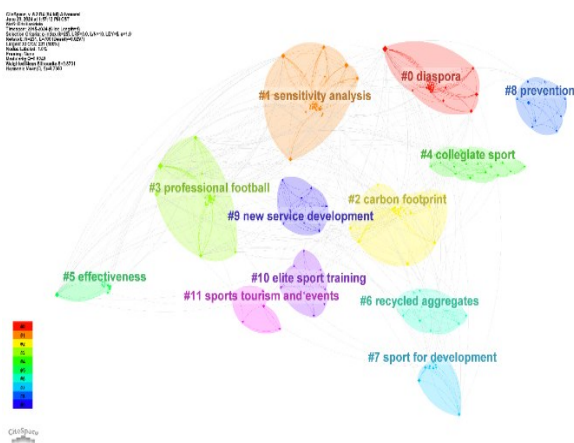
The atlas displays various regions of different colours, each

The clusters represent the diverse and intricate nature of research in the field of football tourism and sustainability. They also reflect the researchers' dedication and focus on various aspects and elements. The clusters highlight areas in the literature that require further investigation, such as the examination of the lasting effects of sustainable tourism practices in less-studied regions or the implementation of digital tools to enhance sustainability in sports events. In addition, researchers could explore other areas of study, such as using AI to reduce the environmental impact of sports events or creating new financial models to support sustainability in collegiate sports. These ideas have the potential to foster collaboration across different academic disciplines in order to create a holistic approach to promoting sustainable growth in football tourism.

representing distinct clusters of research topics within the academic field. The size and colour depth of each cluster can provide insights into the significance and level of engagement within the cluster. The density of the points in the cluster reflects the level of concentration of the studies within the cluster, with denser clustering indicating a more focused and specific approach to the topic. The lines in the atlas illustrate the co-occurrence relationships between the various terms. Keywords that are more connected and have

a greater frequency suggest a greater importance within the research field.

These concepts are often discussed together in academic research. The interconnection and distance between clusters can provide insights into the evolutionary path of the research field, showcasing the shift from competitive advantage to the apparel industry. By examining the clustering map, researchers can pinpoint areas within the research field that have yet to be explored. There are areas between clusters that have not been thoroughly explored by researchers, indicating potential research directions that have yet to be pursued. Figure 5 offers a broad view of the dialogue and knowledge structure in the field of football tourism and sustainability. Through the analysis of this map, researchers can gain insights into research trends, important concepts, and their interconnections, which can inform and shape future research directions.



**Figure 6:** Keyword Cluster Network Map in The Field of Soccer Tourism and Sustainable Development (2014-2024).

### Burst Analysis of Keyword

Table 6 presents the top 18 keywords exhibiting citation bursts in football tourism and sustainable development research from 2014 to 2024. A citation burst refers to a sudden and significant increase in the number of citations for a particular keyword within a specific period, typically indicating widespread attention to a topic or concept within the field.

The 'Strength' value represents the level of intensity of the keyword burst. A higher value indicates a stronger rise in citations for the keyword within the relevant time period. Through the analysis of keyword bursts in football tourism and sustainable development, we can observe the emergence of specific terms that hold great significance during certain periods. These terms reflect changes in research priorities and thematic interests.

As an illustration, the term 'intervention' had a burst

strength value of 1 in 2015 and was utilised until 2017. It can be inferred from this pattern that authors in the early stages primarily concentrated on strategies for health intervention. In 2018, there was a noticeable increase in the usage of the term "sustainability," as indicated by its strength value of 2. "World Cup" made its debut in 2019 with a formidable strength of 1.83, extending its influence until 2020, which witnessed a surge in the amount of academic literature focused on significant sporting events and sustainable development. The surge in interest in football also started in 2020 and has continued to grow until 2022, signifying a significant shift in the research focus within the football industry towards sustainable development.

In 2020, there was a significant focus on the concept of citizenship, indicating a growing interest in studying the role of civil society in sustainable development. In the year 2022, there was a noticeable rise in the importance of "Sport" with a strength of one. This trend is expected to continue until 2024, indicating a growing emphasis on sustainable development within the sports sector. Both attendance and capacity started to increase in 2022 and are projected to continue until 2024, indicating a renewed emphasis on spectator involvement and resource management concerns. Lastly, the "2030 agenda" also gained significant attention in 2022, highlighting the research community's increasing focus on incorporating the United Nations Sustainable Development Goals into the sports industry.

The analysis presented indicates that research on football tourism and sustainability has progressed through three distinct stages: the initial exploration stage (2014-2018), the subsequent development stage (2019-2021), and the current maturity stage (2022-2024). In the initial exploration stage, the main focus is on understanding the fundamental concept and initial effects of football tourism. The research findings reveal the initial impact of football tourism on the local economy. They highlighted the potential of this initiative to stimulate the growth of the local economy. During the development stage, our main focus was on environmental management and the social impact. The researchers proposed certain environmental management measures and examined the influence of football tourism on community cohesion. During the mature stage, a deeper analysis is conducted, with a focus on technological innovation, policy influence, and interdisciplinary research. This leads to the development of a more comprehensive theoretical framework and practical guide. Additionally, the application of sustainable development goals (SDGs) in football tourism is explored. Ultimately, the examination of bursts in research interests



demonstrates a shift from initial investigations into particular intervention measures to more expansive implementations of sustainable development practices. Future research will continue to explore the circular economy, sustainable business models, consumer

behaviour, and technological applications. These studies aim to provide valuable insights for scholars and practitioners who are interested in promoting sustainable development within the football tourism industry.

**Table 6**

*Analysis of The Present Strength of Keywords in Medical Treatment, Health, Recuperation and Health Tourism and Sustainable Development Study (2014-2024)*

| Keywords            | Year | Strength | Begin | End  | 2015 - 2024 |
|---------------------|------|----------|-------|------|-------------|
| intervention        | 2015 | 1        | 2015  | 2017 |             |
| care                | 2015 | 0.81     | 2015  | 2017 |             |
| children            | 2016 | 1.14     | 2016  | 2017 |             |
| sustainability      | 2016 | 2.45     | 2018  | 2019 |             |
| clubs               | 2018 | 0.95     | 2018  | 2019 |             |
| management          | 2016 | 0.8      | 2018  | 2019 |             |
| business            | 2018 | 0.76     | 2018  | 2019 |             |
| consumption         | 2018 | 0.73     | 2018  | 2019 |             |
| behaviour           | 2018 | 0.5      | 2018  | 2019 |             |
| world cup           | 2019 | 1.83     | 2019  | 2020 |             |
| csr                 | 2019 | 0.89     | 2019  | 2020 |             |
| football            | 2015 | 1.26     | 2020  | 2022 |             |
| competitive balance | 2018 | 1        | 2020  | 2021 |             |
| citizenship         | 2021 | 1.46     | 2021  | 2022 |             |
| sport               | 2019 | 1.21     | 2022  | 2024 |             |
| attendance          | 2022 | 1        | 2022  | 2024 |             |
| capacity            | 2019 | 0.57     | 2022  | 2024 |             |
| 2030 agenda         | 2019 | 0.57     | 2022  | 2024 |             |

**Discussion**

This study utilises bibliometric analysis to examine 111 publications from the Web of Science (2014-2024) regarding the convergence of football tourism for sustainable development. We create knowledge maps to uncover collaborations between authors, institutions, and countries, as well as to identify the highlights in keywords that reveal research trends.

This study employs bibliometric analysis to thoroughly examine 169 articles on football tourism and sustainable development in the Web of Science database from 2014 to 2024. We created a knowledge graph to uncover the collaborative connections among authors, institutions, and countries. Additionally, we examined the significant characteristics of keywords to detect patterns in research. We present the Daddi, Tiberio, Hunt, Kate, Wyke, Sally, and Kellison, who play vital roles in this field and have established multiple collaborative research teams. Recently, there has been a noticeable increase in the author cooperation network, indicating a growing trend of interdisciplinary and inter-institutional collaboration. This collaboration is beneficial for advancing the development

of this field. Nevertheless, the current author network displays some level of dispersion. In the future, it is crucial to foster greater collaboration among scholars, particularly through cross-institutional and interdisciplinary efforts. This will help establish stronger partnerships and facilitate the active involvement of emerging authors in advancing research in this field.

Meanwhile, the University of Sterling, Florida State University System, and the University of North Carolina are at the forefront of this field. These core institutions have established multiple research teams that have developed a strong and collaborative relationship in the field of research. In addition, there has been a rise in collaboration between different disciplines and institutions, which has greatly contributed to the advancement of this field. Nevertheless, the current institutional network remains somewhat fragmented. In the future, it would be beneficial for researchers to foster greater collaboration between institutions and disciplines, forge stronger partnerships, and actively involve emerging research institutions to drive progress in this field.

In terms of international collaboration, countries like the United States, the United Kingdom, and Germany have

formed a strong research alliance, making significant contributions to this field. In addition, the majority of research on this topic has been conducted in European countries, with limited contributions from Asian and African countries. While the World Cup is a widely celebrated event, international collaboration plays a crucial role. Currently, several countries in Asia, including Japan, China, South Korea, Thailand, Singapore, and others, have shown interest in the field mentioned.

Researchers have observed that these countries have made notable progress in advancing local football tourism, particularly in terms of infrastructure development and tournament organisation (Cho et al., 2021; Cho et al., 2020; Li & Feng, 2022; Noriya et al., 2021; Park et al., 2023; Pei Diao, 2024; Pei Diao et al., 2023; Siriwat, 2024). Furthermore, numerous countries in Africa and Latin America have given rise to notable football icons, and their cities have become significant hotspots for football enthusiasts. For instance, Rio de Janeiro in Brazil and Buenos Aires in Argentina draw a substantial number of visitors who are passionate about football (Ayuk, 2022; Van Campenhout & Van Sterkenburg, 2021). As a result, research plays a crucial role in promoting developed countries in Europe and the United States to guide countries in Asia, Africa, and Latin America to actively engage in the field of research. It also fosters and promotes global cooperation.

An analysis of keyword clusters highlights the wide range of subjects covered in research on football tourism and sustainable development. The topics covered encompass sustainable development goals, carbon footprint, environmental management in professional football, university sports, circular economy, and more. The links between clusters illustrate the sequential structure and growth of this field. Further research should thoroughly investigate the relationships between these fields and utilise cluster analysis to identify areas for development and trends for future study.

Researchers place significant emphasis on the connection between football tourism and sustainable development goals. Future studies will further explore strategies to support the Sustainable Development Goals (SDGs) in football tourism. These strategies will cover areas such as climate change, resource management, and engagement with local stakeholders. In the realm of environmental management, the research primarily centres around the negative ecological consequences and strategies for mitigating these impacts. Future research is expected to focus on implementing eco-friendly technologies and environmental strategies to promote sustainability in football tourism. The study's economic benefits section

focuses solely on the direct and indirect effects of football tourism. It is anticipated that future research will further explore the long-term economic impact, motives, and threats of football tourism. Researchers are examining the ways in which football tourism contributes to social integration and cultural exchanges. This emphasis allows for more detailed analysis of how social inclusion policy and culture contribute to the development of football tourism in both policy and practice, indicating a positive outlook for the pitch.

An analysis of keyword emergence reveals a clear progression of research interests in the field of football tourism and sustainable development, which can be categorised into three distinct phases: There are three phases: the preliminary exploration phase from 2014-2018, the development phase from 2019-2021, and the maturity phase from 2022-2024. During the initial discovery phase from 2014 to 2018, researchers focused on concepts such as "intervention" and "sustainability." They examined the impact of football tourism on the host economy and its potential to stimulate economic growth. During the development phase from 2019 to 2021, the focus was on topics like the "World Cup," "football," and "environmental management." Authors engaged in discussions regarding the environmental and social responsibilities associated with football tourism. They also provided specific recommendations to enhance environmental management and evaluate social impacts. In the last stage (2022-2024), there is a focus on citizenship, sport, attendance, capacity, and the 2030 Agenda. These terms represent an effort to establish a set of organised theoretical and practical ideas and goals to incorporate SDG into the framework of Football Tourism.

An analysis of keyword emergence indicates a notable change in research interests over time. In the beginning, the emphasis was on specific factors that could be addressed individually. However, there has been a shift towards exploring the wider applications of sustainability concepts. This informative shift provides a foundation for future research to explore concepts such as circular economy, sustainable business models, consumer behaviour, and technologies essential for a sustainable future in the football tourism industry. It aims to keep researchers and practitioners informed and engaged.

This study adopts a wider viewpoint to analyse the connection between football tourism and sustainable development and establishes a more comprehensive knowledge framework. Unlike previous literature that uses a qualitative approach (Nassaji, 2020), this study utilises bibliometric analysis and Cite Space software for data visualisation. This approach offers a practical, accurate,

and systematic understanding of the knowledge structure, emerging trends, and future directions in this field.

## Conclusion

This study employs bibliometric analysis methods and Cite Space software to conduct a systematic review of the literature on football tourism and sustainable development, aiming to establish a comprehensive knowledge map. The data indicates an upward trajectory of publications in this field since 2014. Further research should enhance international collaboration, exchange best practices, and examine how technological advancements can further support the sustainable development of football tourists. This study solely examines English content within the Web of Science database. Further research could expand this study to encompass books in different languages, resulting in more comprehensive findings.

Further research can analyse and compare the responsibilities and impacts of different tourism categories on sustainable development. This will help to better understand the strengths and weaknesses of various forms of tourism in terms of sustainability. In addition, the correlation between sustainable growth in tourism and digital transformation can be explored. The potential of utilising big data, artificial intelligence, and virtual reality to enhance sustainable football tourism development is worth considering. Researchers should conduct thorough investigations on the impact of football tourism enterprises

on sustainable development goals, including CSR, green supply chain, and low carbon tourism. Examining successful strategies and examples of sustainable football tourism development in various countries and regions can enhance the exchange of knowledge and pooling of resources on an international scale. Finally, researchers should investigate the effects of sustainable football tourism on local communities and cultures. They should explore strategies for achieving sustainable tourism development that also safeguard and promote local cultures and communities.

This study exclusively utilises the Web of Science database due to data accessibility limitations. Future research should explore the use of additional databases to improve the comprehensiveness and representativeness of the results. In addition, further research could enhance and expand upon this study by utilising qualitative research methods like case studies and interviews to explore pertinent issues in greater depth. Further research could examine the effects of emerging technologies on sustainable development in football tourism, the perceptions, attitudes, and intentions of consumers from diverse cultural backgrounds towards sustainable football tourism products, and the cooperation between governments, businesses, and communities to foster sustainable development in football tourism.

By focussing on these areas, future research has the potential to enhance sustainable practices in football tourism. This, in turn, can contribute to the overall sustainable development goals of the sports and tourism industries.

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