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Scoring big: a bibliometric analysis of the intersection between sports and public relations

Hanny Hafiar[a], Heru Ryanto Budiana[a], Khairul Hafezad Abdullah[b], Davi Sofyan[c] and Kholidil Amin[a]

[a]Faculty of Communication Science, Universitas Padjadjaran, Sumedang, Indonesia; [b]UUM College of Business, Universiti Utara Malaysia, Kedah, Malaysia; [c]Department of Pyshical Education, Universitas Majalengka, Majalengka, Indonesia

ABSTRACT

The escalating ubiquity of social media has intensified the influence of public relations on the general populace's outlook toward sports and athletes. However, there are limited studies in the literature regarding an overview of public relations in the context of sports. This study addresses this gap by using bibliometric analysis to provide an overview of current trends and future developments in sports PR. The procedures have been executed by analysing the most productive authors and organisations, the frequently researched subjects, and the most cited publications. A comprehensive search of scientific databases was conducted to analyse 524 publications. The datasets retrieved in this study were analysed using ScientoPy and VOSviewer to identify tendencies and map the research themes based on the authors' keywords. The findings highlight that the keywords frequently used by previous scholars are public relations, sports, and social media. An overall picture of the state of research on sport and public relations is given by this bibliometric analysis. The findings indicate that despite significant advancements in this domain, a considerable amount of work remains to be undertaken, particularly in underexplored areas such as sports communication and image restoration. The findings of this study can be advantageous for individuals involved in sports and public relations, including researchers, practitioners, and students.

IMPACT STATEMENT

As an industry that generates billions of dollars annually, sports and sports media rights have become two giant industries with their own images and charms. Both industries require public relations to effectively create and perpetuate the image of their industry to a wide audience. The good news is that the global public relations market is also predicted to grow at an equivalent rate. The growth of these three industries has attracted the interest of many parties globally, including researchers in related fields. Along with the accelerated development of digital technology, which has an impact on sports, media and public relations, there is a high need for new and contemporary insights, both theoretically and practically. The results of this study provide several interesting insights regarding research within the scope of sports public relations, which is expected to be able to fill knowledge gaps and encourage the growth of this industry.

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Introduction

Sports require multiple media platforms to promote sport (including teams, athletes and organisations). As a booming industry, both are expected to increase by various marketing research institutions. Grand View Research predicts that the global sports market will grow from $486.61 billion in 2022 to $512.14 billion in 2023 at a compound annual growth rate (CAGR) of 5.2%. The sports market is expected to

CONTACT Hanny Hafiar hanny.hafiar@unpad.ac.id Universitas Padjadjaran, Sumedang, West Java 45363, Indonesia
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grow to $623.63 billion in 2027 at a CAGR of 5.0% (Grant View Research, 2023). Meanwhile, The global value of sports media rights – $55.1 billion in 2022 – represents steady growth on last year's total of $54.5 billion (SportBusiness, 2023). On the other hand, sports also require public relations to create and maintain a positive image effectively to a wide audience. The good news is that the global public relations market is also predicted to grow from $100.39 billion in 2022 to $107.05 billion in 2023 at a CAGR of 6.6%. The public relations market is expected to grow to $133.82 billion in 2027 at a CAGR of 5.7% (The Business Research Company, 2023). The data shows the prospectus for these three industries, which are closely related to each other.

PR has a strategic position in promoting sports to the public through the media. The role of public relations (PR) is also critical in helping organisations build and maintain a positive reputation and effectively communicate with their stakeholders. PR is the practice of managing communications between an organisation and its stakeholders, such as customers, employees, investors, and the general public (Anderson, 2006; García, 2013; Van Dyke & Verčič, 2009), and involves strategic communication and organisational engagement efforts to create and maintain positive images, reputations, and relationships (Akhmadieva et al., 2021), as well as mutual benefits (Harrison et al., 2022).

Numerous studies have been conducted on the influence of mass media and new media in crisis management and public relations in sports. These studies have shown that effective communication strategies are crucial to maintaining a positive image for athletes, teams, and organisations. Several studies have been conducted, including studies on the influence of mass media and new media in crisis developments in sports PR (Compton & Compton, 2014). Sports marketers should leverage PR practices by engaging in media monitoring to inform appropriate crisis responses and help control narratives (LaGree et al., 2019). Sports may not be the main focus of PR (L'Etang, 2006). However, the growing importance of communication and reputation management in the sports industry has led to greater recognition of the value of PR in this area. The public relations unit of a sports team is very important to be able to work together in order to get positive support from the community (Mitrook et al., 2008).

On the other hand, in the field of sports communication, there is a lot of debate and research surrounding the effect of PR on how people view sports and athletes. The analogy 'no news is good news' does not apply in this field. The decline in news coverage can be associated with a decline in its reputation and is starting to be forgotten. On the other hand, excessive reporting on sports (for example, athletes or sports teams) can have a counterproductive effect. Especially if there is more negative news than positive news because negative incidents and scandals involving athletes and sports organisations can harm their reputation and image (Sato et al., 2019). It may also be because it creates excessive expectations and fanaticism from fans, causing clashes between groups of fans (Bajari, 2017; Hafiar et al., 2023). Previous studies have stated that strong PR tactics can influence the attitudes and behaviour of sports fans towards sports and athletes (Pedersen, 2013). It means the public's interest and support can be increased by promoting sports through effective PR. So, building the image and reputation of sports organisations, teams, and athletes can depend on PR through establishing appropriate strategies, tactics and methods (Compton & Compton, 2014; Kim & Manoli, 2022). Taking effective steps according to unpredicted situational factors is a challenge for public relations practitioners. Instead of succeeding, it can actually make things worse if they take the wrong steps.

Therefore, it is important for a PR to reflect on the various cases that have been researched by academics in this field. However, given the dynamic conditions of the sport itself, it is possible that several types of contemporary cases have not been fully explored while fulfilling the recommendations of Abeza et al. (2014), who call for future research examining the development of the field of sport communication and its derivatives to include publications from a wide range of academic journals to reflect the depth and scope of development of this field. To address this scientific issue requires rigorous domain review and analysis using bibliometrics on a number of documents from various journals. The utilisation of bibliometric analysis is a valuable approach to investigating research trends across diverse fields. The use of bibliometrics to determine research trends has been used by previous researchers, for example, to examine research trends related to smart urban governance in Asia (Sulistyaningsih et al., 2023) and creative industries in Indonesia (Aziz et al., 2023) and even compare research trends from the two countries (Hidayat et al., 2023).

The aforementioned analytical approach enables scholars to measure and assess the influence of academic publications on a given subject or discipline during a designated timeframe (Mukherjee et al., 2022). This method can identify influential research and highlight areas where further investigation is needed by examining bibliographic data, including citation counts, journal publications, authorship, and keywords (Donthu et al., 2021). Additionally, bibliometric analysis can reveal emerging trends within a field. While our study provides valuable insights into the most productive authors, institutions, topics, and publications in the field of sports public relations, it is important to note that this research area is still relatively young, and there is much room for further investigation. The objectives of bibliometric research related to sports public relations may include: (1) Identifying key authors and institutions in the field of sports public relations; (2) Mapping the intellectual structure of the field by analysing co-citation and co-authorship patterns in sports public relations research; (3) Identifying the most influential journals and publications in the field of sports public relations; (4) Analysing the evolution of research themes and trends in sports public relations over time.

Literature review

Sports public relations

Indeed, understanding the role of media (and, by extension, the public relations and marketing industries) in shaping the perception of sports and athletes is critical for all stakeholders involved (Schirato, 2016), including sports organisations, athletes, journalists, and fans. Sport is a unique 'product' due to media coverage, as that is the main way of disseminating most of its themes and images (Bruce & Tini, 2008), so the public image of the sport is largely outside its direct control (Desmarais & Bruce, 2008). It is critical for sports organisations, athletes, journalists, and fans as they work to navigate this complex terrain and shape the future of sports media (Borges, 2019). Sports PR has always had the dual purpose of serving two masters—both corporate and community (Boyd & Stahley, 2008). It is important for sports organisations to balance the need to overcome negative publicity and implement proactive actions to promote positive stories and messages about sports (Bruce & Tini, 2008).

Furthermore, sports teams must build and maintain strong bonds with various stakeholders, including sponsors, fans, and the communities in which they play (Babiak & Kihl, 2018). Consequently, it is important to cultivate and maintain this bond (Babiak & Wolfe, 2009; Sherwood et al., 2018). When supporters learn about sports league sustainability initiatives, one of the most important consequences of PR in a sports context is trust (Harrison et al., 2022). Although the application of PR in sports is not always obvious, the modern sports industry can greatly benefit from it, and one of its strategies is communication (Hopwood, 2005) as representatives of the living, breathing, heart, and soul of sport, fans and supporters are highly visible expressions of PR and sports communication (Hopwood et al., 2010). Campaigns using PR as a tool to promote a particular cause can reinforce existing power dynamics and avoid meaningful engagement with the political issues underlying sport (Benson, 2017).

The relationship between sports, media, and PR professionals

The world of sports has long been intertwined with the media and public relations (PR) professionals. The interaction between sports, media, and PR experts has never been more crucial than it is now, given the expanding power of the media in influencing public opinion and the increased necessity for effective communication strategies in the sports business. In order to reach a wider audience, develop their brand, and make money, sports organisations and sportsmen depend on media coverage.

Public relations may not always serve the purpose of impartiality, which can limit the public's access to the whole story. This is especially true in the world of sports, where PR professionals often work to shape a specific narrative and protect their clients' reputations. PR may not serve the purpose of impartiality, which can prevent the public from hearing the whole story (Hull & Wilson, 2020). To deal with the crisis and maintain the trust of fans, an overarching PR strategy that emphasises the value of building relationships between sporting groups and valued audiences can be implemented (Jensen & Butler, 2007). By using balanced, symmetrical communication, the government should concentrate on

developing policies that can increase public satisfaction and provide support for major sporting events (Kim & Manoli, 2022), so it is important to establish PR strategies and policies (Ki & Hon, 2012). PR in sports have long been used to advertise important matches and highlight star athletes (Kleinmann, 2020). Another research emphasises the potential efficacy of mortification and corrective action as a PR image improvement strategy (Compton, 2014; Koa, 2022).

Professional sports rely heavily on the media to shape public perception and engage with their audiences; therefore, the relationship between sports and the media is an important aspect of sports public relations (Desmarais & Bruce, 2008). Online activism has the potential to be a powerful tool for public relations professionals, but it requires careful planning and execution to be successful (Dimitrov, 2008). Unlike other fields of public relations, sports information is emphatically a male-dominated industry (Whiteside & Hardin, 2010). The relationship between public relations, mass media, and audiences is complex and varied, with dynamics of power and influence flowing in many directions (Fortunato, 2000). It is important for all parties involved to be aware of these dynamics and work to build ethical and transparent relationships that prioritise the interests and needs of all stakeholders (Fortunato, 2000). Cultural circuits (regulation, production, consumption, representation, and identity) in the context of PR practices can be used to analyse how organisations negotiate power and meaning with their stakeholders, especially international fans (García, 2021).

Materials and methods

The design of the bibliometric analysis implemented in this study is depicted in Figures 1 and 2. Seven processes are involved in presenting bibliometric analysis, which is becoming increasingly important. The authors summarise the processes necessary for conducting a bibliometric analysis and emphasise each phase's significance.

The developing research questions stage involves determining the research questions. In this instance, the research questions are as follows: (1) what is the current state of research on sports and public relations?; (2) who are the most productive authors and institutions?; What is the geographical distribution of research?; What are the most frequently studied topics?; and What are the most frequently cited publications? As with previous bibliometric research, it is important for researchers to put forward arguments about the benefits of the findings that will be revealed based on the research questions in this paper (Abhilash et al., 2023). It is hoped that these findings will provide new insights for all stakeholders regarding the current state of research (RQ1), the most prolific authors and institutions (RQ2), the geographic distribution of research (RQ3), the most frequently studied topics (RQ4), and the most frequently

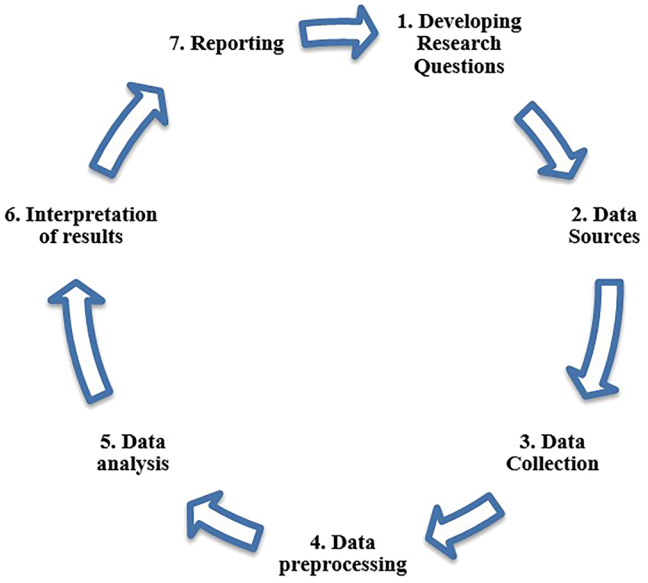


Figure 1. Bibliometric analysis design.

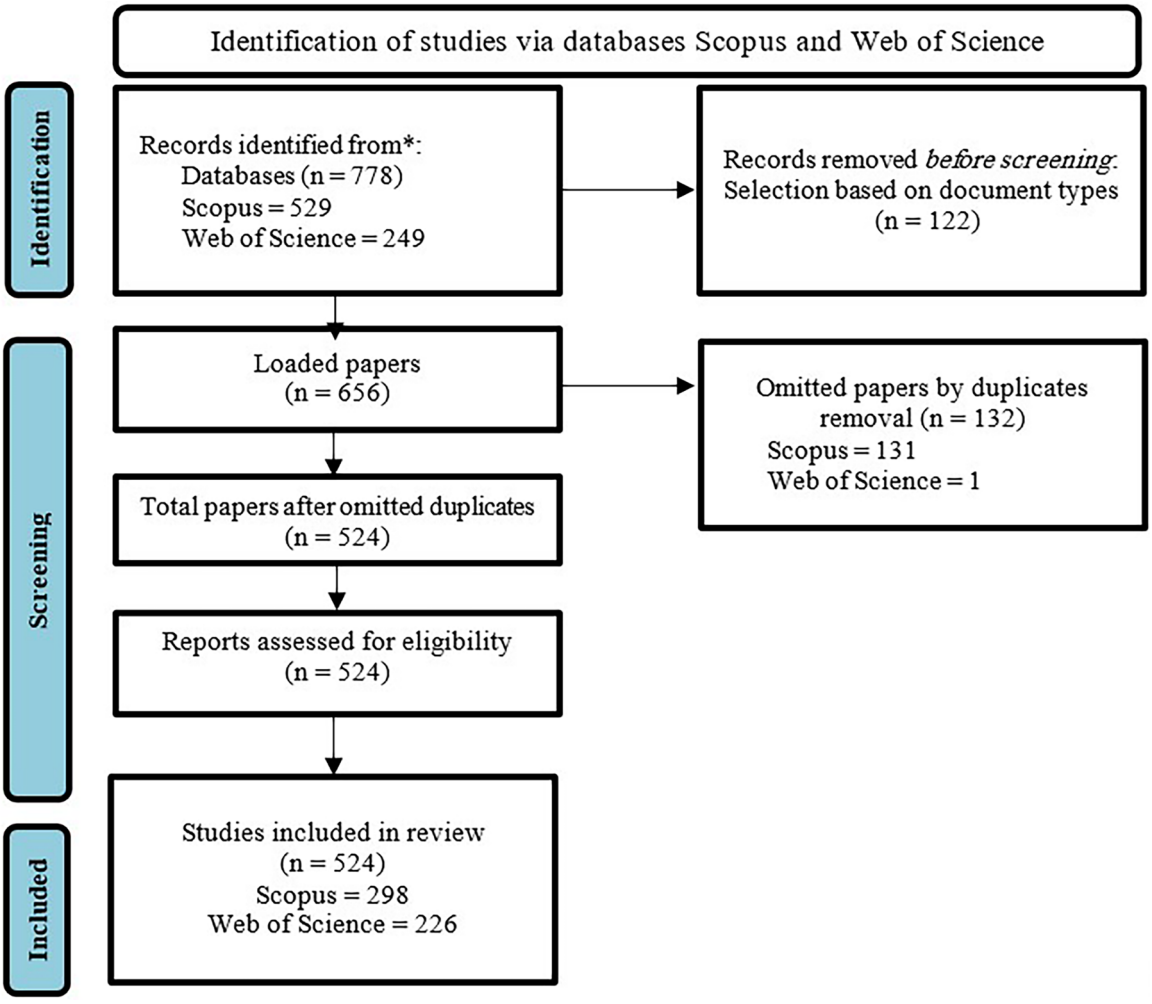


Figure 2. Flow diagram of searches of databases and registers.

cited publications (RQ5) on sport and public relations. The findings can also be used to direct various researchers and prospective researchers to investigate this topic more deeply.

In the data source stage, we identify the relevant data sources for the analysis required. Scopus and Web of Science have been chosen as the data sources for this investigation. Scopus and Web of Science (WoS) are well-known as authoritative and exhaustive bibliographic databases in academic research (Sofyan, Abdullah, & Hafiar, 2022). These databases include a broad assortment of high-quality scientific literature, such as peer-reviewed articles, conference proceedings, books, and book chapters, spanning a variety of subjects.

The data collection stage involves gathering bibliographic information from the chosen data sources. The data-collecting process uses search queries and keywords to locate relevant publications and export bibliographic data into a suitable format. The datasets gathered from both databases utilised the following keywords: 'sport*' AND 'public relation*.' The retrieval operation occurred on March 6, 2023. Then, the data pre-processing stage entails cleansing, standardising, and preparing bibliographic data for analysis. This includes eliminating duplicates, addressing errors, and ensuring the data is in an analysis-ready manner (Ruiz-Rosero et al., 2019).

In the data analysis stage, we entail analysing the data using bibliometric approaches. Citation analysis and keyword analysis were employed to conduct this study based on the specified research questions. This study employs the popular tools VOSviewer and ScientoPy to examine bibliometric datasets. VOSviewer is a tool for visualising bibliographic data in network maps (Orduña-Malea & Costas, 2021), which can assist in identifying patterns, trends, and publication clusters (Sofyan, Abdullah, Akinci, et al.,

2022; Supriadi et al., 2023). ScientoPy is utilised to compute bibliometric indicators such as citation counts, h-index, and g-index for individual authors, publications, and institutions. ScientoPy can generate statistical summaries, create charts and tables, compare bibliometric indicators across different groups, and assist us with clustering analysis to locate groups of publications with comparable bibliographic data, merge WoS and Scopus datasets based on a field tags correlation table, find and remove duplicated documents (Abdullah & Sofyan, 2023; Peñuelas-Angulo et al., 2023; Ruiz-Rosero et al., 2019).

In the interpretation of the results stage, we require analysing the results of the bibliometric study in order to respond to the research question. The outcomes can be utilised to determine the most referenced papers, the most influential authors, and the essential study topics in the discipline. Then, we use appropriate tables and graphs to present the results of the bibliometric analysis in a transparent and succinct manner.

Results

The previous section's preliminary analysis and research questions were the basis for the bibliometric analysis results in this study. Referring to a number of bibliometric literature such as Donthu et al. (2021) and Abhilash et al. (2022), we have attempted to carry out performance analysis (such as year of publications and contributing author) and science mapping (authors institutions, and Countries; Keywords; and Cited Publications) in this results section. These results can provide a comprehensive assessment of the present state of sports and public relations research and can be used to guide future research efforts. However, not all analysis items included in the Performance and Science Mapping analysis are presented in this study because the researcher chose items that can be directly related to the research questions asked (RQ1, RQ2, RQ3, RQ4).

Preliminary data analysis

Using the ScientoPy module, preliminary data analysis on sports and public relations using the Scopus and WoS databases could be performed more effectively by combining datasets and removing duplicates. The downloaded datasets resulted in 778 publications utilising both databases. Articles, proceeding papers, conference papers, review papers, and book chapters were prioritised for inclusion in the pre-processed datasets for this investigation.

This stage created approximately 656 relevant documents. Scopus contained 429 documents, whereas WoS held 227. The following step is to delete duplicates by replacing the comma in the author's name with a semicolon, removing dots, commas, and unusual accents from the author's name, and removing instances with similar titles and authors. There were 524 datasets counted, with 298 Scopus and 226 WoS datasets. A total of 132 duplicate papers have been eliminated from this analysis. Figure 2 depicts the structure of database and registry searches.

Figure 2 also demonstrates how the organisation of database and registry searches provides a clear and visible overview of the methodologies utilised in the data-gathering process, which is essential for guaranteeing the validity and replicability of the research. By taking a methodical and open approach to data collection and analysis, researchers can increase the likelihood that their findings will stand up to scrutiny and be used as a foundation for further study.

The current state of sports and public relations research

By evaluating the number of publications on the subject, their sources, and the publication production patterns across time, bibliometric analysis can provide a snapshot of the current level of research on sports and public relations. The number of publications on the connection between sports and public relations in the Scopus and WoS databases from 1990 to 2022 is depicted in Figure 3. The number of sports and public relations articles has climbed significantly throughout the years, reaching a peak in 2021 in both the Scopus and WoS databases. Except for a few years, including 2008 and 2010, the number of articles in Scopus is typically greater than in WoS.

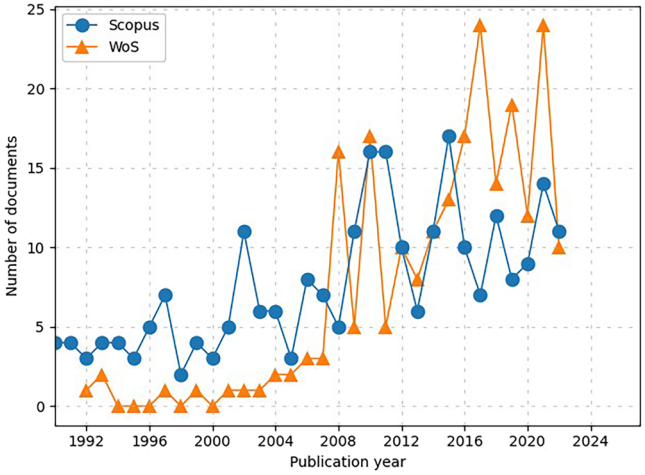


Figure 3. Publications growth in Scopus and WoS.

Table 1. The top ten productive authors.

Rank	Author	Total	AGR	ADY	PDLY	h-Index
1.	Nicholson, M.	5	0	0	0	4
2.	Mazerolle S.M.	4	0	0	0	4
3.	Sherwood, M.	4	0	0	0	4
4.	Anderson, W.B.	3	0	0	0	3
5.	Boyle, R.	3	0	0	0	3
6.	Bruce, T.	3	0	0.5	33.3	2
7.	Desmarais, F.	3	0	0.5	33.3	2
8.	Eason C.M.	3	0	0	0	3
9.	Marjoribanks, T.	3	0	0	0	3
10.	Osborne, A.	3	0	0	0	2

Note. AGR: Average growth rate; ADY: Average documents per year; PDLY: percentage of documents in last years.

In addition, the number of publications has skyrocketed during the previous decade, with 2010 marking a significant increase. This is concurrent with the rise of social media and its impact on sports and public relations. The data also exposes swings in the number of publications from one year to the next, which may indicate changes in research interest or funding prospects.

In a nutshell, Figure 3 can provide significant insights into the research output and trends associated with sports and public relations; however, the data reflect only papers indexed in Scopus and WoS and may not include all significant publications on this topic. In offering a complete examination of the production patterns of sports and public relations research over time, these results contribute to the field of study. The study demonstrates a considerable increase in the number of articles published on this subject during the past decade. The findings indicate that social media has significantly changed sports and public relations study interests. Variations in the number of publications from year to year may suggest a shift in research emphasis or funding sources.

The results provide a helpful overview of the present status of sports and public relations research, shedding light on the scope of the two databases and the trends related to this issue. The findings can serve as a foundation for future bibliometric research and as a resource for sports and public relations scholars and practitioners.

The most productive authors and institutions

The authors who have produced the most articles on the convergence of sports and public relations are shown in Table 1. The table contains the overall number of publications, the average growth rate, the average number of articles per year, the average number of publications per year by author, and the h-index.

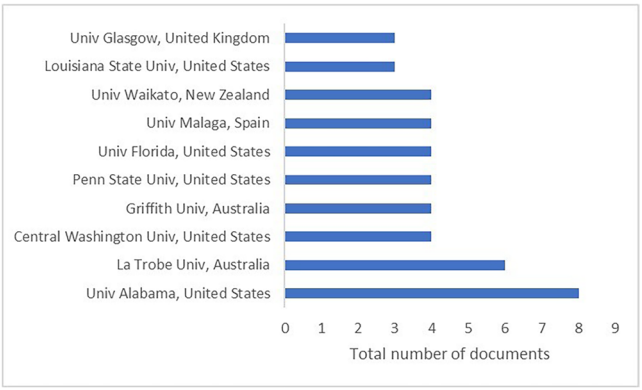


Figure 4. The top ten productive institutions.

Calculated by the number of publications (h) with at least h citations, the h-index assesses an author's productivity and impact. The higher the h-index, the better the productivity and influence. With 5 publications and an h-index of 4, Nicholson, M. is the most prolific author in this discipline, according to Table 1. With four publications and an h-index of 4, both S.M. Mazerolle and M. Sherwood are tied for second place. The remaining top 10 authors have each authored three papers.

Notably, while the number of publications and h-index might provide an approximate assessment of an author's productivity and influence, they should not be used as the sole criterion for determining the quality of an author's research. Additional considerations should also be evaluated, including the research's relevance and impact. Overall, the data in Table 1 can provide insight into the most prolific sports and public relations authors and can be utilised to discover possible partners or subject matter experts.

Figure 4 illustrates the top ten institutions in terms of the overall number of sports and public relations publications. The University of Alabama in the United States tops the list with eight publications, followed by La Trobe University in Australia with six publications. Central Washington University in the United States and Griffith University in Australia published four publications each, followed by Penn State University and the University of Florida in the United States, the University of Malaga in Spain, and the University of Waikato in New Zealand, all with four publications each. Louisiana State University in the United States and the University of Glasgow in the United Kingdom have three publications each, ranking ninth and tenth, respectively. The ranking is based on the selected bibliometric indicators and can change based on the criteria and dataset.

This finding is a significant addition to research because it identifies the top institutions that have substantially contributed to the sports and public relations research sector. The result indicates that the United States and Australia have the most institutes publishing publications on this topic. Researchers interested in collaborating or seeking funding options for sports and public relations research may find this material valuable. The ranking also suggests that the University of Alabama has a significant presence in sports and public relations research, which may indicate its excellent experience and resources in this field. This result provides insight into the institutions that have contributed significantly to advancing sports and public relations research.

The geographical distribution

Figure 5 provides a ranking of the top ten countries with the most sports and public relations publications and their average PDLY (publications per year since the first publication). With 182 articles, the United States appears to be the leader in this subject, followed by the United Kingdom with 41 publications and Australia with 31 publications. Nevertheless, when analysing the average PDLY, it is intriguing to note that countries like Russia, the Netherlands, and New Zealand have greater rates, indicating that their research production in this subject may increase.

VOSviewer is a bibliometric analysis tool that may be used to examine international co-authorship networks. The analysis results of co-authorship by nation are displayed in Figure 6 as a map depicting clusters of countries with close co-authorship relationships. The minimum number of documents of a

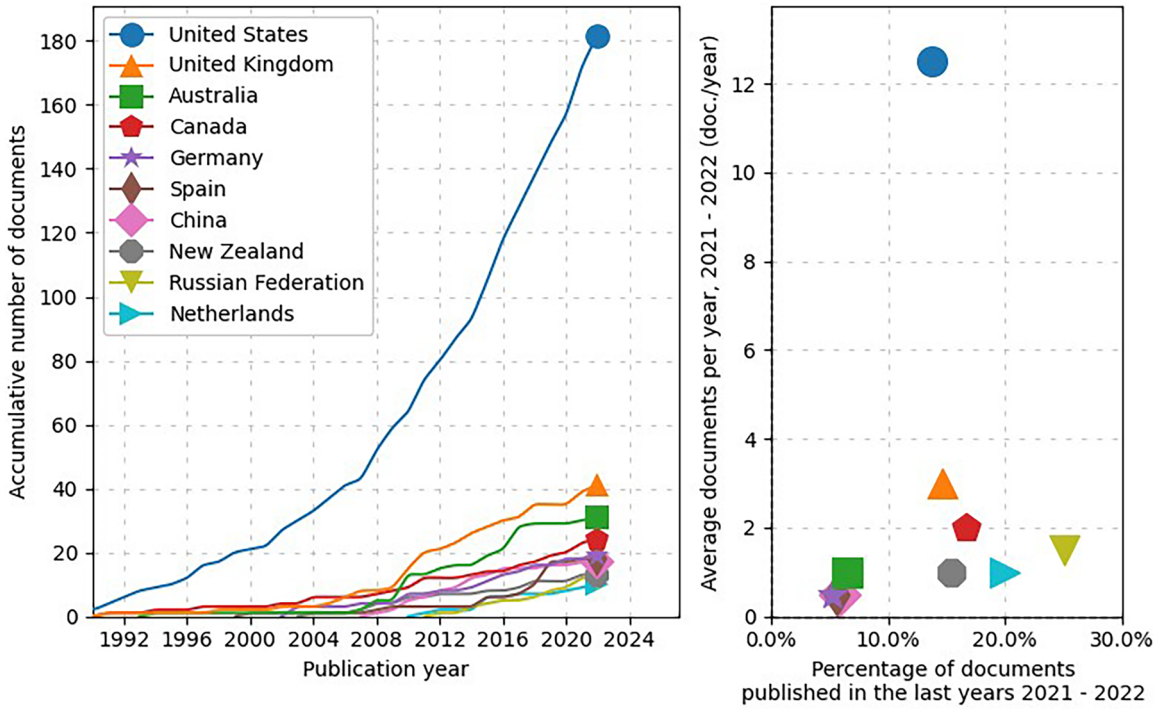


Figure 5. The geographical distribution of sports and public relations publications.

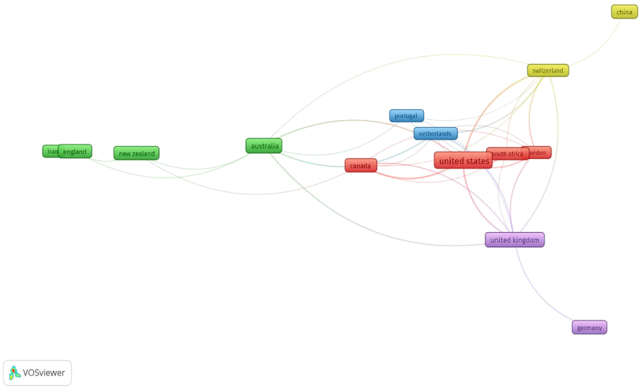


Figure 6. The network visualisation map of co-authorship by country.

country and citation had been set to 5. Thus, out of 266 countries, 18 have met the threshold level. In this instance, it has been determined that the United States has tight ties with South Africa, Sweden, and Canada. These countries are grouped, as shown by the colour red. Portugal and the Netherlands are placed together in the same cluster, denoted by blue. In the green cluster are Australia, New Zealand, and Iran. Switzerland and China are in the yellow cluster, and the United Kingdom and Germany are in the purple cluster.

The VOSviewer map displays the clustering of countries based on their co-authorship relationships. It can provide valuable insights into the worldwide collaboration network of research in a specific field or subject. Identifying country clusters makes it possible to find potential research alliances and partnerships that can be developed to further the field's research. The relevance of these data to research is that they reveal patterns of international research productivity and collaboration in sports and public relations. The examination of publications and their average PDLY highlights the leading countries in the sector and reveals development possibilities in other nations. Researchers, governments, and funding organisations can utilise this information to identify areas where additional investment is required to advance the discipline. Using VOSviewer to examine international co-authorship networks provides extra

insight into the collaborative links between nations and can aid in identifying potential partners for future research endeavours. These findings might inspire methods for enhancing international collaboration and boosting sports and public relations research output.

The most frequently studied topics

Figure 7 illustrates the top 15 authors' keywords on the connection of sports and public relations, their total number of publications over three decades, and the percentage of publications in 2021 and 2022. The results show the top 15 author keywords in the dataset, with their total occurrences and average PDLY values. The keyword 'Public relations' has the highest total occurrences (83) and an average PDLY value of 14.5. The keyword 'Sports' comes in second with 39 occurrences and an average PDLY of 12.8, followed by 'Social media' with 28 occurrences and an average PDLY of 25. The keyword 'Media' has 15 occurrences and an average PDLY of 0, while 'Communication' has 12 occurrences and an average PDLY of 0.

Other notable keywords in the list include 'Crisis communication' (12 occurrences, average PDLY of 25), 'Physical activity' (12 occurrences, average PDLY of 8.3), 'Sports journalism' (7 occurrences, average PDLY of 42.9), and 'Image repair' (6 occurrences, average PDLY of 33.3). It is interesting to see that some of the keywords related to sports communication and journalism, such as 'Football' and 'Sponsorship', have lower average PDLY values (0) compared to other keywords in the list, indicating that they are relatively new or emerging research areas in the field.

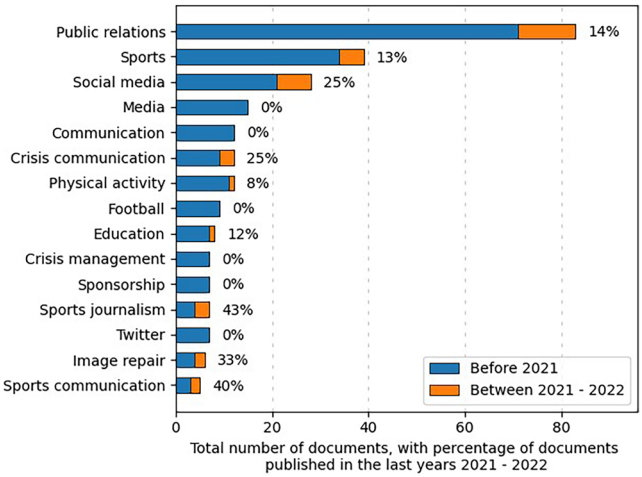


Figure 7. The top 15 authors' keywords.

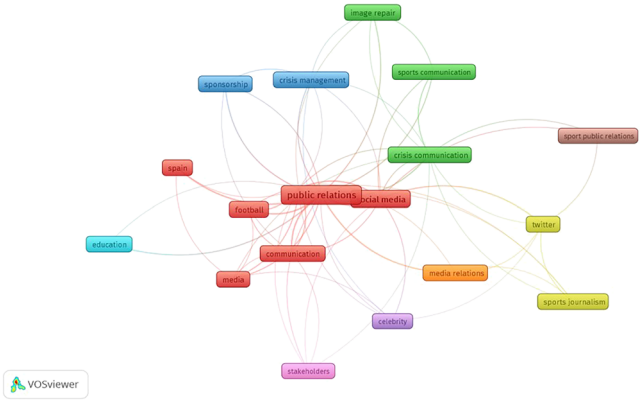


Figure 8. The network visualisation of the authors' keywords.

Based on VOSviewer results (see Figure 8), a co-occurrence analysis of authors' keywords with a minimum occurrence of 5 resulted in 19 keywords that met the threshold level. The keyword 'public relations' was found to be closely associated with 'social media,' 'football,' 'communication,' 'media,' and 'Spain,' and they were grouped in the red cluster. The keywords 'crisis management,' 'sports communication,' and 'image repair' were clustered together in green. Lastly, the keywords 'sponsorship' and 'crisis management' were closely related and grouped in the blue cluster. These results suggest several clusters of co-occurring author keywords in the field of communication research, each of which may represent different subfields or areas of focus within the broader field.

Figure 7 provides a detailed summary of the most often occurring author keywords in sports and public relations. This information can assist researchers in identifying and developing trends and themes in this subject, allowing them to formulate appropriate study questions and hypotheses. For instance, the discovery that 'Social media' is a highly frequent keyword demonstrates the significance of social media in sports communication. Future research may investigate the impact of social media on player and fan communication, brand image, and reputation management.

The VOSviewer results in Figure 8 offer a valuable foundation for comprehending the interrelationships between author keyword phrases. This data can be used to uncover possible areas of collaboration and research partnerships, as well as new trends and issues in the field. For instance, the tight relationship between 'public relations' and 'social media' suggests that future research may investigate social media's function in sports organisations' public relations tactics. Likewise, the clustering of 'crisis management,' 'sports communication,' and 'image repair' indicates the need for additional research on crisis communication in sports companies and the development of effective communication techniques for resolving reputational crises in this setting.

The most frequently cited publications

Table 2 presents the ten most cited publications in the field we are currently scrutinising, with citations from Scopus and WoS databases. The minimum number of citations for the publications was 40. It should be noted that the number of citations obtained from other databases, such as Google Scholar, may differ. Based on data acquired from Scopus and WoS databases, the study identified and ranked the top 10 most referenced sports and public relations publications from 1991 to 2015. The top-ranked article by Arai et al. (2014). The article proposed the athlete's brand image model. The second-ranked article explored Olkkonen's approach to international sports sponsorship (2001). The third-ranked article by Felsher et al. (2004) examined sports lottery tickets and social policy. Knight & Greenberg (2002) explored leading sportswear and shoe merchandiser companies and labour conditions through a PR perspective. Another highly cited article examined organisational sponsorship by Witcher et al. (1991) in fifth place. Those articles provide insightful perspectives on the dynamics of sports PR and emphasise the significance of excellent communication in the sports sector.

Table 2. The top 10 most-frequently cited publications.

Rank	Authors	Title	Citation
1	Arai et al. (2014)	Branding athletes: Exploration and conceptualisation of athlete brand image	118
2	Olkkonen (2001)	Case study: The network approach to international sport sponsorship arrangement	74
3	Felsher et al. (2004)	Lottery playing amongst youth: Implications for prevention and social policy	74
4	Knight and Greenberg (2002)	Promotionalism and subpolitics: Nike and Its Labor Critics	71
5	Witcher et al. (1991)	The Links Between Objectives and Function in Organisational Sponsorship	69
6	Joy et al. (2013)	Physical activity counselling in sports medicine: A call to action	64
7	Kroshus et al. (2015)	Pressure on Sports Medicine Clinicians to Prematurely Return Collegiate Athletes to Play After Concussion	64
8	Brown et al. (2015)	May No Act of Ours Bring Shame: Fan-Enacted Crisis Communication Surrounding the Penn State Sex Abuse Scandal	62
9	L'Etang (2006)	Public relations and sport in promotional culture	58
10	van Dam and van De Velden (2015)	Online profiling and clustering of Facebook users	56

Based on the findings, it can be concluded that the most cited publications in sports and public relations research have considerably contributed to the body of knowledge by shedding light on many elements of sports communication. The emphasis on brand image, sponsorship, policy, employee relations, and crisis communication demonstrates the diversity of research areas in the field of sports and public relations. Those research findings make substantial contributions to the sports industry's body of knowledge.

Discussion

The preliminary data analysis on sports and public relations utilising the Scopus and WoS databases offers useful insights. The preliminary data analysis included in this study lays a strong foundation for additional research into the relationship between sports and public relations. Researchers can detect gaps in the literature and concentrate their research efforts on areas that have not yet been thoroughly studied with the insights generated from this approach.

The present condition of sports and public relations research is discussed in this section. The findings reveal a sharp rise in publications on sports and public relations during the last ten years, with a peak in 2021. This development is attributed in large part to the growth of social media. The data also show variations in the volume of publications from year to year, which may point to shifts in the nature of the study or potential sources of funding.

The findings of this study offer insightful information on the organisations and authors in the fields of sports and public relations that are most productive. However, it is crucial to remember that other factors, such as relevance and impact, should be assessed when judging the calibre of an author's research. The University of Alabama is ranked as one of the best universities, showing how active this field is in the United States. Researchers looking to collaborate or find funding sources for sports and public relations research can benefit from the ranking.

It is important to remember that the ranking can vary depending on the criteria and dataset utilised and is dependent on the chosen bibliometric variables. Therefore, additional investigation and assessment are required to develop a more thorough understanding of the field. The findings suggest that these authors and institutions are leaders in sports public relations research, with a strong focus on productivity and impact. Therefore, the identification of these most productive authors and institutions can provide valuable insights into the current state of research in sports public relations and inform future research directions and collaborations. Furthermore, the identification of these productive authors and institutions may have important implications for practitioners and policymakers in the sports industry. Therefore, understanding the research landscape and identifying key players in this field can help practitioners and policymakers make more informed decisions that are grounded in evidence-based research.

The authors who produced the most articles on the convergence of sport and public relations are affiliated with institutions from the Americas, Europe and Australia. These findings provide evidence for future research directions regarding the need for Asian and African researchers to start studying this topic based on the cultural context that is definitely different in each study area, which can be started through research collaboration, at the same time responding to recommendations from Xu who suggested an approach from a different angle in studying the topic of public relations based on the regional and cultural context that surrounds it (Xu & Huang, 2016).

Sports communication and image repair are important topics in the field of public relations as they involve managing the image and reputation of athletes, teams, and sports organisations. The goal of sports communication and image repair is to maintain a positive public image and restore it in the event of negative events or crises. Studies have shown that sports organisations and athletes often face communication challenges that can affect their public image. For instance, the use of social media by athletes can sometimes lead to negative publicity, such as inappropriate comments or controversial posts. In addition, crises such as doping scandals or athlete misconduct can damage the image of sports organisations and athletes. One way to address these challenges is through effective image repair strategies. These strategies involve acknowledging the issue, taking responsibility, expressing

regret, offering compensation or a solution, and demonstrating commitment to prevent future similar incidents.

Researching organised professional sports is an area of increasing investigation in PR and crisis communication (Koerber & Zabara, 2017). Sports PR practitioners need to have a comprehensive media relations strategy focused on building positive relationships with journalists and other media professionals. Some influence over the sports news that is reported and what becomes news is actually the task of sports public relations personnel (Fortunato, 2000). Given the relatively low cost of preparing delegations, participation in the Olympics provides significant diplomatic and PR advantages (Houlihan & Giulianotti, 2012). The Olympic delegation was organised as a PR campaign to reflect the image that state officials wanted to project (Carmi & Levental, 2019).

The study's findings offer insightful information about the geographic distribution and patterns of research collaboration in sports and public relations. This study demonstrates the possibility of improved research productivity in this area. Based on their co-authorship affiliations, the countries are clustered on the VOSviewer map. These clusters can shed light on prospective international research connections and collaborations. The results of this study have consequences for academics, policymakers, and funding bodies hoping to advance the study of sports and public relations. Additionally, the study of co-authorship networks might provide ideas for tactics to improve global cooperation and increase this field's research output. The conclusions drawn from this study can help guide decisions on the allocation of resources and investments, as well as inspire fresh ideas for improving cross-border cooperation in this area.

The top 10 most frequently cited publications in sports and public relations research have rather varied major foci, according to the list presented. *First*, there are a number of articles that concentrate on sports branding and image management. Arai et al. (2014) and Brazeal (2008) look at athletes' branding tactics and public image management. In their 2002 study, Knight and Greenberg examine policies related to employee relations in sports product companies. In a larger cultural framework, L'Etang (2006) investigates the function of public relations in promoting sports. Walsh & McAllister-Spooner (2011) investigate the image-repair techniques used by sportsmen in crisis situations, and Brown et al. (2015) evaluate how supporters react to a sports controversy. *Second*, another major theme is the health and safety of athletes (Chalmers et al., 2004; Joy et al., 2013; Kroshus et al., 2015; Matheson et al., 2011). *Third*, other articles focus on the business of sports, such as sponsorship and event management. Olkkonen (2001) and McKelvey & Grady (2008) discuss the management of sponsorship arrangements and strategies for protecting sponsorship programmes from ambush marketing. Witcher et al. (1991) examine the objectives and functions of organisational sponsorship, while Wilson et al. (2008) look at how sports sponsors manage relationships with athletes who have committed transgressions. *Fourth*, there are several articles that examine the role of sports in society. Felsher et al. (2004) investigate the implications of sports lottery tickets and social policy, while Nettleton and Hardey (2006) study the construction of charitable bodies through urban marathons. Summers and Morgan (2008) consider the role of public relations in creating sporting celebrities and managing fan expectations, while Humphreys et al. (2010) examine the effects of sponsorship and ambushing on the memory of sponsors and events. The top 10 most frequently cited publications in sports and public relations research cover a wide range of topics, including branding and image management, sponsorship and event management, and the role of sports in society. While there is no clear dominant theme, these articles collectively demonstrate the interdisciplinary nature of sports and public relations research.

Further, sports and public relations, an increasingly vital component of contemporary sports management, are influenced by a host of social, cultural, and economic factors. These factors shape the way sports organisations, athletes, and teams communicate with the public, the media, and their fans. Sports are an integral part of many societies, serving as a unifying force that brings people together. Social factors such as values, norms, and public sentiment play a significant role in shaping sports PR (Kassing et al., 2004). Also, culture, a complex whole that includes knowledge, beliefs, arts, laws, customs, and capabilities acquired by people, profoundly impacts sports PR. Cultural elements influence the way people perceive and engage with sports (Houlihan & Giulianotti, 2012). In addition to the above, the economic context is another critical factor in sports PR. The financial stakes in sports have risen dramatically

with the growth of broadcasting rights, sponsorship deals, and player salaries. This increase heightens the importance of effective PR in managing brand reputation, attracting investment, and maintaining fan engagement. Economic disparities between different sports, leagues, and regions can also influence PR strategies.

Conclusion

This bibliometric analysis provides a comprehensive overview of the current state of research on sports and public relations. The study's findings, which identified the most productive authors, organisations, frequently researched subjects, and most cited publications, offer significant insights into the field. This will also answer the main objective of this research, which is to find out about the latest trends related to sports public relations, which tend to show major changes in this field along with the existence of digital communication media. The prominent role of digital communication, particularly social media, in sports and public relations research underscores the profound influence of technological advancements on these disciplines.

Future research should place a particular focus on the rapidly evolving digital landscape and its impact on athlete image management and sports communication. Specific areas of interest could include the role of social media in shaping public perceptions of athletes, the use of digital platforms for crisis communication in sports, and the influence of online fan communities on sports PR strategies. Moreover, emerging areas such as sports communication and image restoration present ripe opportunities for scholarly investigation. In addition, research could investigate how sports communication has adapted to the digital age and the effects of these changes on athlete-fan interactions.

While the study offers valuable insights, it also acknowledges certain limitations. The research scope was confined to works from the Scopus and WoS databases, potentially excluding relevant studies. The keyword analysis may not have fully captured the complexity and diversity of the research field, and the study did not evaluate the quality of the papers used in the research. Future bibliometric analyses in this field could benefit from a broader database search and the use of more nuanced methods for theme identification. These improvements could mitigate potential language or geographical biases and better reflect the complexity of the research field.

In conclusion, this bibliometric analysis offers a valuable snapshot of the current research landscape in sports and public relations as a basis for academics to further explore and introduce emerging contemporary sports public relations concepts from various regional and cultural contexts. Also, public relations practitioners involved in the sports field should have a better understanding of marketing and improving the reputation of their sports brands in the digital age. Future research should continue to explore the interplay between sports, public relations, and digital communication and the implications of these interactions for athlete image management and compare them based on the study area and location or other comparable scopes. At the same time, more comprehensive and nuanced research methods could help further refine our understanding of this complex and rapidly evolving field.

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About the authors



Hanny Hafiar is an associate professor at the Public Relations Study Program, Faculty of Communication Science, Universitas Padjadjaran, Indonesia. Her research interests include sports branding, sports communication, public relations, and disability studies.

Heru Ryanto Budiana is a senior lecturer at the Public Relations Study Program, Faculty of Communication Science, Universitas Padjadjaran, Indonesia. His research interests relate to government public relations and business communication.

Khairul Hafezad Abdullah is a researcher at the School of Business Management, UUM College of Business, Universiti Utara Malaysia, Kedah, Malaysia. His research interests include bibliometrics and business management.

Davi Sofyan is a senior lecturer at the Physical Education Study Program, Faculty of Teaching and Educational Science, Universitas Majalengka, Indonesia. His research interests cut across sports management, physical education, sport and religion, and bibliometrics.

Kholidil Amin is a researcher at the Faculty of Communication Science, Universitas Padjadjaran, Indonesia. His research interests include media effects, communication technology, and public relations.

ORCID

Hanny Hafiar http://orcid.org/0000-0003-2265-274X

Data availability statement

All data generated or analysed during this study are available from the corresponding author.

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