

The Development of Sports Management Research in Indonesia in the Early Twenty-First Century: A Bibliometric Analysis

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The Development of Sports Management Research in Indonesia in the Early Twenty-First Century: A Bibliometric Analysis

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Authors' contribution:

- A. Conception and design of the study
- B. Acquisition of data
- C. Analysis and interpretation of data
- D. Manuscript preparation
- E. Obtaining funding

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Abstract. Sports scholars should pay more attention to the advancement of sports management research in Indonesia. The purpose of this research is to provide a comprehensive elaboration by describing the descriptive parameters of the publication and extracting the author's keywords in the field of sports management. This study includes a primer for researchers to better understand advances in scientific publications related to exercise management. A thorough examination of the 220 documents found in the Scopus database was carried out from 2003 to 2022 (as of March, 7 2022). According to the findings, the number of publications fluctuated, with the most publications occurring between 2018 and 2020, with a total of 111 documents. Furthermore, with a total of 26 documents, the Journal of Physics Conference Series is the title of the most productive scientific source. Overall, this topic's research is evolving, with new methods and directions being established. As a result, a thorough examination of sports management in a variety of research areas such as sport marketing, sport policy, sport entrepreneurship, and sport industry, can help researchers and practitioners advance prospective knowledge in these fields.

Keywords: sport management; development of sport; Indonesia; bibliometric analysis

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INTRODUCTION

Sport is an important aspect of Indonesian culture (Moser, 2010). Pancasila was described by Soekarna, the country's first president, as five principles: nationalism, humanity, democracy, social justice, and monotheism. By forming the majority of the Dutch East Indies Youth through local sports clubs, Soekarno began to establish mechanisms for developing national unity and integration. During the colonial period, these clubs became opponents of the Dutch government. Sports, in some ways, foster the independence and nationalism of Indonesian youth (Adams, 2002). A poll conducted by the Jakarta-based Center for Strategic and International Studies (CSIS) with 600 millennials (ages 17 to 30) and 851 non-millennials (ages 30 and up) in 34 provinces from August 23 to 30, 2017 revealed that millennials (30.8 percent) prefer to exercise (Irawanto, 2019). This explains why sport has become such an important part of Indonesian culture (Sofyan et al., 2021).

Sport development faces challenges in the areas of sports policy, sports funding, and sports infrastructure that are essential for sustainable sports, with the overarching goal of providing peace, quality lifestyles, and the impact of sport on the country's economy (Oluwatoyin et al., 2021). People have tended to pay attention to primary things such as the economy and job opportunities as a result of socioeconomic conditions and those that have not yet recovered from the multidimensional crisis, so sports have not become a top priority for the Indonesian people (Febrianta, 2014). However, when one considers the potential of the Indonesian people's human and natural resources, there are numerous opportunities to establish sports as a leading sector. Indonesia, which has tremendous potential in the sports industry, should be able to capitalize on this potential by utilizing sports industry marketing strategies (Lismadiana, 2017). The potential for tourism sports in Indonesia is enormous, including aerospace (air), marine (sea), and land sports such as mountain climbing and river/rafting (Irfandi & Rahmat, 2017).

The sports system is the entire interconnected and long-term sports subsystem for achieving national sports goals (Kristiyanto, 2007). In Indonesia, sports policy continues to favor achievement sports that prioritize the development of the sport itself (Muhlisin et al., 2021). Indonesia's role in the sports development process is more visible in terms of government support, stakeholder support, and university academics (Lumintuarso et al., 2021). Indonesians have attempted to profit from the performance of sporting events, and we have gained not only pride but also popularity (Nopembri, 2004). The main concerns of the Olympic Movement around the world are good governance and the management of national federations and sports organizations (Saputra & Sumarno, 2021). With the appeal of international sports competitions (Adams, 2002), the Indonesian National Sports Committee (KONI) was formed in 1966, which encouraged the formation of an organization that played a direct role in sports achievement in Indonesia.

Scholars have increasingly urged sports management researchers to incorporate more critical social sciences into their work over the last two decades (Amis & Silk, 2005; Chalip, 2006; Skinner & Edwards, 2005). Sports management as a discipline is expanding at a rapid pace, as evidenced by the body of knowledge produced by the field, among other things (Ciomaga, 2013). Recently, several articles published in management journals by sports management researchers have reinterpreted the relationship between sports management and management, arguing that sport and sports organizations have the potential to enhance organizational studies due to idiosyncratic characteristics such as the relative ease of measuring performance in sports organizations (Day et al., 2012; Wolfe et al., 2005).

This bibliometric study is an objective and trustworthy resource that provides a mapping of research areas, allowing for a broader range of selected studies (Hernández-Torrano et al., 2020). This is due to the fact that librarians and researchers are at the forefront of developing innovations and providing policymakers with ideas (Nurhasan et al., 2022). The authors are

particularly interested in research aspects related to sports management in this bibliometric review, to (1) describe the descriptive parameters of the publication such as the evolution of publications, leading sources, influential institutions, and active authors, and (2) extract keywords. This research helps academics interested in sports management, policymakers create more effective and efficient sports development, and individuals consider research patterns in sports management activities to identify potential future research opportunities.

METHOD

The main objective of this study was to look into the trend of sports management publications in Indonesia from in the Early 21st Century. This study focused on the entire data collection and data filtering process for sports management publications in Indonesia. An important step that must be taken at the start of this bibliometric review investigation is to determine and clarify the objectives of the research to be conducted. Figure 1 depicts the procedure for gathering Scopus documents, which will then be analyzed.

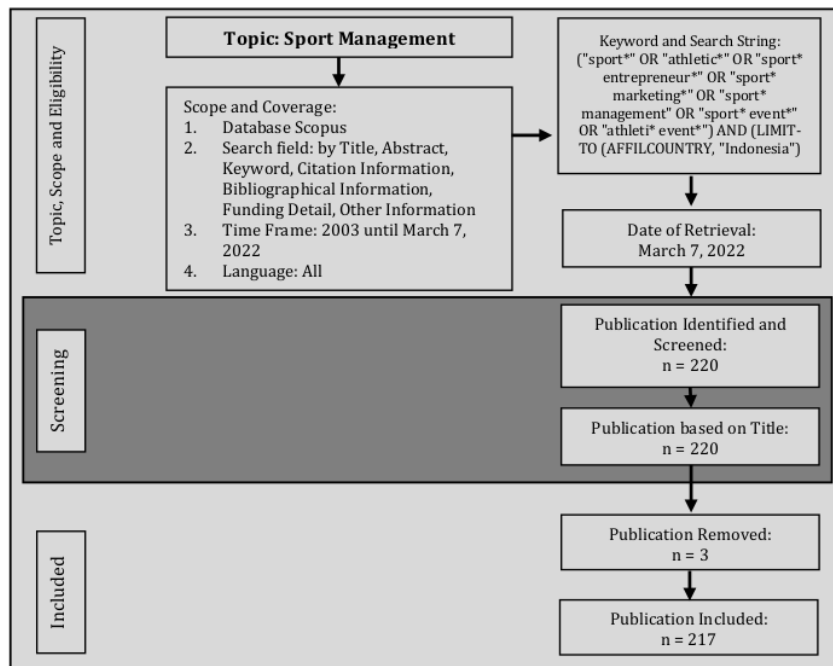


Figure 1. Flowchart of data collection procedures

The primary goal of this bibliometric review is to examine the trend of publications in the Scopus database related to sports management in Indonesia. Using the document checking approach in the Scopus database, the investigation was completed in the context of descriptive analysis. In this descriptive analysis, to get the Scopus database, keyword searches TITLE ABS ("sport*" OR "athletic*" OR "sport* entrepreneur*" OR "sport* marketing*" OR "sport* management*" OR "sport* event*" OR "athleti* event*") AND (LIMIT-TO (AFFILCOUNTRY, "Indonesia"), to retrieve Scopus data was carried out on March 7, 2022. The Scopus database was chosen because it contains more documents than Web of Science and Pubmed (Sweileh et al., 2017) and has been frequently cited in previous research (Khiste & Paithankar, 2017). This review employs data in Comma-separated Values (CSV) and Research Information Systems (RIS) formats exported to Microsoft Excel, Publish or Perish (Abdullah, 2021). The data

collected includes the author's name, the source of the document, the year of publication, the title of the publication, the scientific source, the subject area, and the type of publication.

The sum of metadata that must be met in order to be analyzed varies greatly in bibliometric analysis. The number of metadata numbers for bibliometric analysis is not specified, nor are the minimum and maximum metadata standards that are eligible to be analyzed. The total number of papers to be taken for any document is the same, and each paper can only be chosen once. The paper sample sizes were 20, 50, 100, 200, 500, 1,000, and 2000 (Rogers et al., 2020). To analyze bibliometrics, a minimum of 50 documents is required (Bornmann et al., 2014; Lehmann et al., 2008; Sjöstedt et al., 2015); 50-100 documents (Glänzel & Moed, 2012; Seglen, 1994); 300 documents (Donthu et al., 2021); 100-300 documents (Snyder, 2019). This means that no specific number of metadata has been assigned to it. As a result, the 217 metadata in this study are deemed adequate for conducting a bibliometric analysis on the topic of sports management in Indonesia.

RESULT AND DISCUSSION

Table 1 displays the 217 published documents discovered in the Scopus database between 2003 and 2022. (Macrh, 7 2022). 128 (58.98%) of these publications are article, 82 (37.78%) are conference paper, 3 (1.36%) are book chapter, 2 (0.91%) are review article, and 1 (0.45%) are editorial and letter. By language, 217 (98.63%) of these articles have been published in English, while 3 (1.37%) have been published in Indonesian. Table 2 also describes the areas of active research on sports management in Indonesia.

Table 1. Distribution of document type from 2003-2022 (Macrh, 7 2022)

| Year | Article | Conference Paper | Book Chapter | Review | Editorial | Letter |
|-----------|---------|------------------|--------------|--------|-----------|--------|
| 2003-2005 | 2 | - | - | - | 1 | - |
| 2006-2008 | 1 | - | - | - | - | - |
| 2009-2011 | 2 | 1 | - | - | - | - |
| 2012-2014 | 8 | 1 | - | - | - | - |
| 2015-2017 | 9 | 16 | - | - | - | - |
| 2018-2020 | 57 | 54 | - | 1 | - | - |
| 2021-2022 | 49 | 10 | 3 | 1 | - | 1 |
| Total | 128 | 82 | 3 | 2 | 1 | 1 |

Source: Database Scopus

Table 2. Distribution of subject area

| Subject areas | RC | % | Subject areas | SC | % |
|--|----|-------|--------------------------------------|----|------|
| Social Sciences | 73 | 16.04 | Energy | 13 | 2.85 |
| Engineering | 52 | 11.42 | Mathematics | 12 | 2.63 |
| Medicine | 43 | 9.45 | Earth and Planetary Sciences | 10 | 2.19 |
| Computer Science | 39 | 8.57 | Decision Sciences | 9 | 1.97 |
| Health Professions | 36 | 7.91 | Psychology | 7 | 1.53 |
| Business, Management and Accounting | 32 | 7.03 | Chemistry | 3 | 0.65 |
| Physics and Astronomy | 28 | 6.15 | Multidisciplinary | 3 | 0.65 |
| Materials Science | 22 | 4.82 | Agricultural and Biological Sciences | 2 | 0.43 |
| Biochemistry, Genetics and Molecular Biology | 20 | 4.39 | Chemical Engineering | 2 | 0.43 |
| Arts and Humanities | 15 | 3.29 | Nursing | 2 | 0.43 |

| | | | | | |
|-------------------------------------|----|------|--|---|------|
| Economics, Econometrics and Finance | 15 | 3.29 | Pharmacology, Toxicology and Pharmaceutics | 2 | 0.43 |
| Environmental Science | 15 | 3.29 | | | |

Source: Database Scopus

Sources of active scientific research

Table 3 lists the top nine active journals with the most sports management publications. With 26 documents, the Journal of Physics Conference Series has the most publications. The International Journal of Human Movement and Sports Sciences had the second highest number of publications, with 19, and the IOP Conference Series Materials Science and Engineering had the third highest number of publications, with 17. Table 3 lists additional scientific sources.

Table 3. Top nine active scientific sources related to sports management

| Source | Status | Document | Publisher | Country |
|---|-----------------------------------|----------|---|----------------|
| Journal of Physics Conference Series | Coverage 2005-2020 | 26 | IOP Publishing Ltd. | United Kingdom |
| International Journal of Human Movement and Sports Sciences | Coverage 2019-2020 | 19 | Horizon Research Publishing | United States |
| IOP Conference Series Materials Science and Engineering | Discontinued in Scopus as of 2021 | 17 | IOP Publishing Ltd. | United Kingdom |
| Asian Social Science | Discontinued in Scopus as of 2015 | 7 | Canadian Center of Science and Education | Canada |
| IOP Conference Series Earth and Environmental Science | Coverage 2010-2020 | 6 | IOP Publishing Ltd. | United States |
| Cakrawala Pendidikan | Coverage 2018-2020 | 4 | Yogyakarta State University | Indonesia |
| International Journal of Innovation Creativity and Change | Discontinued in Scopus as of 2020 | 4 | Primrose Hall Publishing Group | United Kingdom |
| International Journal of Scientific and Technology Research | Discontinued in Scopus as of 2020 | 4 | International Journal of Scientific and Technology Research Editura | India |
| Journal of Physical Education and Sport | Coverage 2011-2020 | 4 | Universitatea din Pitesti | Romania |

Active Institutions

The highest number of publications was from the University of Education Indonesia, Bandung (33; 9.26%), the second highest number of publications was from Yogyakarta State University, Yogyakarta (24; 6.74%), and the third highest number of publications was from Jakarta State University (19; 5.33%). Other institutions are presented in Table 4.

Table 4. Top 12 active institutions related to sport management

| Institution | City | Record Count | % |
|----------------------------------|------------|--------------|------|
| Universitas Pendidikan Indonesia | Bandung | 33 | 9.26 |
| Universitas Negeri Yogyakarta | Yogyakarta | 24 | 6.74 |
| Universitas Negeri Jakarta | Jakarta | 19 | 5.33 |
| Universitas Negeri Semarang | Semarang | 11 | 3.08 |
| Universitas Indonesia | Depok | 9 | 2.52 |
| Universitas Gadjah Mada | Yogyakarta | 9 | 2.52 |
| Bina Nusantara University | Jakarta | 9 | 2.52 |

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|-----------------------------|-----------|---|------|
| Universitas Negeri Padang | Padang | 9 | 2.52 |
| Institut Teknologi Bandung | Bandung | 7 | 1.96 |
| Universitas Sriwijaya | Palembang | 6 | 1.68 |
| Universitas Negeri Surabaya | Surabaya | 6 | 1.68 |
| Universitas Negeri Medan | Medan | 6 | 1.68 |

Active Authors

Because of the wide scope of this field, the most active authors in publishing manuscripts related to sport management have contributed to readers' understanding that sport management is an interesting scientific discipline to study more deeply. Based on the number of publications, the most active authors in sports management related publications are shown in Table 5.

Table 5. Top five authors related to sport management

| Auhtor | Affiliation | Document | H-Index | Citation |
|----------------|---|----------|---------|----------|
| Burhaein, E. | Universitas Ma'arif Nahdlatul Ulama Kebumen | 4 | 13 | 528 |
| Ma'mun, A. | Universitas Pendidikan Indonesia | 4 | 10 | 676 |
| Ndayisenga, J. | Yogyakarta State University | 4 | 4 | 41 |
| Pratama, K.W. | Institute of Advanced Science, Engineering, and Education (IASEE) | 4 | 3 | 34 |
| Suherman, A. | Universitas Pendidikan Indonesia | 4 | 13 | 1641 |

Top-Cited Articles

O. Troynikov and W. Wardiningsih (2011) received the highest citation in their article entitled "Moisture management properties of wool/ polyester and wool/bamboo knitted fabrics for the sportswear base layer" with 83 citations. The second most cited publication is a study entitled "Using an extended Technology Acceptance Model to understand students' use of e-learning during Covid-19: Indonesian sport science education context", written by Sukendro, et al., (2020), with a total of 36 citations. The third most cited publication is a study entitled, "Sports activities during any pandemic lockdown", written by M.A. Lim, R. Pranata (2021), with a total of 25 citations. These three publications can be considered by a researcher in particular to conduct research in the future.

Table 6. Top citation

| Cite | Author | Title | Year | Publisher |
|------|--|--|------|----------------------------------|
| 83 | O. Troynikov, W. Wardiningsih | Moisture management properties of wool/ polyester and wool/bamboo knitted fabrics for the sportswear base layer | 2011 | Textile Research Journal |
| 36 | S. Sukendro, A. Habibi, K. Khaeruddin, B. Indrayana, S. Syahrudin, F.A. Makadada, H. Hakim | Using an extended Technology Acceptance Model to understand students' use of e-learning during Covid-19: Indonesian sport science education context | 2020 | Heliyon |
| 25 | M.A. Lim, R. Pranata | Sports activities during any pandemic lockdown | 2021 | Irish Journal of Medical Science |
| 23 | J.D. Goodway, R. Famelia, S. Bakhtiar | Future directions in physical education & sport: Developing fundamental motor competence in the early years is paramount to lifelong physical activity | 2014 | Asian Social Science |

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| 23 | M.C.-H. Wang, J.M.-S. Cheng, B.M. Purwanto, K. Erimurti | The determinants of the sports team sponsor's brand equity: A cross-country comparison in Asia | 2011 | International Journal of Market Research |
| 21 | M. Ruslin, P. Boffano, Y.J.D. Ten Brincke, T. Forouzanfar, H.S. Brand | Sport-related maxillofacial fractures | 2016 | Journal of Craniofacial Surgery |
| 14 | R. Lutan | Indonesia and the Asian Games: Sport, nationalism and the 'new order' | 2005 | Sport in Society |
| 14 | D. Hoedaya, M.H. Anshel | Use and Effectiveness of Coping with Stress in Sport Among Australian and Indonesian Athletes | 2003 | Australian Journal of Psychology |
| 13 | M.F. Nasution, R.I.I. Putri, Zulkardi | Rowing sport in learning fractions of the fourth-grade students | 2018 | Journal on Mathematics Education |
| 13 | E.H. Baur, R.B. McNab, L.E. Williams, V.H. Ramos, J. Radachowsky, M.R. Guariguata | Multiple forest use through commercial sport hunting: Lessons from a community-based model from the Petén, Guatemala | 2012 | Forest Ecology and Management |
| 11 | F. Nurwanto, I. Ardiyanto, S. Wibirama | Light sport exercise detection based on smartwatch and smartphone using k-Nearest Neighbor and Dynamic Time Warping algorithm | 2017 | 8th International Conference on Information Technology and Electrical Engineering, ICITEE 2016 |

Author keywords

Table 7 lists the 30 most frequently used keywords in sports management abstracts. The keyword that appears the most frequently is "sports," which appears 93 times. Table 7 contains additional keywords.

Table 7. Top 30 most used keywords in abstracts related to sports management

| Keyword | n | Keyword | n | Keyword | n |
|--------------------|----|------------------------|---|----------------------------|---|
| Sports | 93 | Male | 9 | Achievement | 4 |
| Health | 16 | Adult | 8 | Competition | 4 |
| Education | 15 | Female | 8 | Design | 4 |
| Human | 15 | Sport Science | 8 | Development | 4 |
| Indonesia | 15 | Commerce | 6 | Information Systems | 4 |
| Physical Education | 15 | Exercise | 6 | Information Use | 4 |
| Athlete | 14 | Adolescent | 5 | Management | 4 |
| Students | 14 | Evaluation | 5 | Observational Study | 4 |
| Article | 13 | Information Management | 5 | Research Methods | 4 |
| COVID-19 | 12 | Sport Tourism | 5 | Social Networking (online) | 4 |

According to table 1, the growth and development of publications related to sports management in Indonesia occurred between 2018 and 2020, with a total publication of 111 documents. This demonstrates that sports scholars are interested in studying the role and function of sports management in Indonesia for the advancement of sports achievement in Indonesia. The Indonesian government's efforts to improve sports achievement include the formation of organizations and the holding of sports championships (UU No 3 Tahun 2005, 2005).

According to table 3, the Journal of Physics Conference Series is the most productive scientific source in terms of publishing manuscripts related to sports management by Indonesian authors, with a total of 26 documents published. Eight of the nine scientific sources used by Indonesian writers to publish their work come from outside the country, while only one scientific source is used for publication. *Cakrawala Pendidikan*, an Indonesian journal affiliated with Yogyakarta State University, became the destination. The educational horizon is not a specific journal in the study of sports science, particularly in sport management. Due to the scarcity of reputable sports science scientific sources in Indonesia, foreign scientific sources are the primary focus for publication. Unfortunately, four of the eight foreign scientific sources in table 3 have been declared discontinued by the scientific source indexing agency, Scopus. It is hoped that in the future, Indonesian writers will be more selective in their selection of scientific sources for publication. The next hope is that there will be many scientific sources related to sports science, specifically in the field of reputable sports management, so that Indonesian writers will have a publication channel to write their monumental works.

With 33 documents, Universitas Pendidikan Indonesia is the most productive institution. Nine of the 12 institutions have a sports faculty or a sports science study program. The other three institutions do not have athletic departments. The extraordinary magnetism in the field of sports management, on the other hand, has piqued the institution's interest in studying more deeply related to sports management. Universitas Indonesia, Universitas Gadjah Mada, and Universitas Bina Nusantara are among them.

Table 5 shows the five most active authors in the field of sports management publishing, with a total of four documents. This also demonstrates that many authors focus on sports management research in schools, universities, communities, and government. Their studies also include sports management in schools, sport marketing, sporting events, sporting tourism, and the sports industry.

With 93 appearances, the keyword "sport" is frequently used. This demonstrates the importance of sport in the advancement of research in the field of sports management. Furthermore, it is critical for future research to use the keywords in table 7 as a foundation for discovering new concepts in sports management research. Keyword examples include commerce, sports tourism, information systems, and social networking (online).

CONCLUSION

As new trends emerge, this bibliometric review encourages the examination and integration of established directions in higher exercise management research. Researchers discovered that the information below provides readers, educational practitioners, sports practitioners, and researchers with a more realistic reality based on a bibliometric review of 19 years of sports management research. Indeed, bibliometric studies can project or provide insight into the state of the art in a specific field or subject. Aside from the useful information provided by this paper, some limitations should be highlighted to assist future readers and researchers in better understanding. There are several limitations to this study. Although researchers only use one database, other databases, such as PubMed, Google Scholar, or Web of Science (WoS), may be able to include more documents than Scopus. Researchers prefer the Scopus database because it publishes articles in high-impact journals.

REFERENCES

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