Original Article

Sport management: Thematic mapping of the research field

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Abstract:

The aim of the study is to map the thematic landscape of the sport management research field. The research process is focused on the following study questions: (1) what are the leading thematic areas attracting the attention of academia? (2) what are the emerging topics in research on sport management? The method of high-frequency keywords co-occurrence analysis was used to identify leading and emerging topics within the research field. Bibliometric data for analysis were retrieved from the Scopus database. The VOSviewer software supported the analysis process and visualization of its findings. The study points out the following leading thematic areas in the research field: (1) professional sport management, (2) physical activity and health, (3) sports staff, (4) IKM in sport management, (5) governance in sport, (6) sport education and learning, (7) humans in sport, (8) fans in sport. Among the emerging topics of scientific inquiry, the following issues are recognized: (1) the use of new information technologies (including social media), (2) sustainable development in sport, (3) fan satisfaction, and (4) physical activity (including grassroots). Taking into account the increase in the number of publications in the research field observed in the 2010s, and the lack of other studies dealing with topic profiling, the study aimed at identifying leading and emerging topics within the sport management research field seems to be valuable both for theory and practice of sport management. Mapping the structure of the field and identifying thematic clusters creates added value especially from the point of view of sport management theory. Co-occurrence analysis of high-frequency keywords unveils a variety of topics and approaches cultivated in the field and relationships among these topics. Pointing out 'hot' (emerging) topics provides guidance for scholars searching ideas for new, interesting research. From the point of view of business practice, the study develops situational awareness of sport managers highlighting the issues they should pay special attention to and supports them in identifying research gaps to be submitted for exploration in further studies by academia, closing the reciprocal loop between theory and practice.

Key Words: sport management, bibliometrics, Scopus, VOSviewer.

Introduction

The emergence of sport management as a research area was triggered by the development of professional sports, primarily in North America. One of the first journals that concerned this area is the *Journal of Sport Management*, which has been publishing articles since 1987. Due to the differences in organization of the system of games between the United States (separate academic and professional sports in a discipline) and Europe (one sport and one competition), there are some gaps in studies in the aforementioned geographical regions e.g. limited research on the operations of European sports clubs or rarely conducted physical education studies in the United States. In the beginning of the 21st century, scholars, motivated by the demand from sports organizations (clubs, federations, sport event organizers), intensified research focused on managing sports. The examples include among others the studies on strengthening the commitment of volunteers [1], the experience of sports fan [2], but also broadly understood sport-for-development [3]. In regard to research methodology, both qualitative and quantitative research methods may be employed in sport management studies [4], but much focus seems to have been given to qualitative research [5–8]. Recently, an eclectic approach is recommended combining qualitative and quantitative methods [9]. Increasing interest of academia in exploring the issues of sport management resulted in its development towards a distinctive research discipline [10,11].

The attractiveness of the research field has resulted in growing scientific output. Almost 2,000 publications dealing with the issue of sport management (i.e. including the phrase 'sport management' in their titles, keywords and abstracts) are found to be indexed by the Scopus database, as of March 2020. A growing trend has been particularly noticeable in the 2010s, when the yearly research production increased from 105 publications in 2010 up to 263 items in 2019. Nevertheless, so far, the amassing research production in the sport management research field has not been mapped thoroughly. Therefore, taking into account the dynamics of increase in the number of publications in the research field in the 2010s, and the lack of other studies dealing with topic profiling, it seems reasonable to map the thematic landscape of the sport management research field, which is the aim of this study. The research process is focused on the following study questions: (1) what are the

leading thematic areas attracting the attention of academia? (2) what are the emerging topics in research on sport management? In the following parts of the manuscript, firstly, research methodology is explained; secondly, the results of thematic clustering and identification of emerging topics in the research field are presented; thirdly, research findings are discussed.

Material & methods

Scopus was used as a source to retrieve bibliometric data for analysis. As of 29 February 2020, we searched for the publications including the phrase ‘sport management’ in their titles, abstracts and keywords (topic search). In total, 1,979 bibliometric records (publications) were retrieved. Scientific output in the field is distributed over 26 subject areas, defined by Scopus. The majority of publications (1,413) is categorized under the umbrella of the Business, Management and Accounting subject area. Other leading areas include: Decisions Sciences (774), Social Sciences (430), Health Professions (278) and Medicine (271). Articles (1,601, i.e. 80.9%) are the dominant type of documents. The sample is biased towards publications written in English (1,869; i.e. 94.4%). Among remaining languages, Spanish and Russian are the followers. The detailed data describing the research sample are provided in Table 1.

Table 1. Parameters of the research sample

Category	Items (N)
Subject area	Business, Management and Accounting (1,413); Decision Sciences (774); Social Sciences (430); Health Professions (278); Medicine (271); Economics, Econometrics and Finance (100); Psychology (85); Computer Science (79); Engineering (60); Arts and Humanities (26); Mathematics (25); Environmental Science (16); Agricultural and Biological Sciences (12); Biochemistry, Genetics and Molecular Biology (11); Multidisciplinary (9); Chemistry (6); Energy (5); Material Sciences (5); Earth and Planetary Sciences (3); Neuroscience (3); Immunology and Microbiology (2); Nursing (2); Pharmacology, Toxicology and Pharmaceutics (2); Physics and Astronomy (2); Chemical Engineering (1); Veterinary (1)
Document type	Article (1,601); Review (113); Conference Paper (98); Book (67); Book Chapter (62); Editorial (15); Erratum (6); Conference Review (4); Note (4); Short Survey (1); Undefined (8)
Language	English (1,869); Spanish (50); Russian (34); Portuguese (13); Croatian (7); French (6); German (4); Chinese (3); Turkish (3); Persian (2); Arabic (1); Lithuanian (1); Catalan (1)

Source: Own study based on data retrieved from the Scopus (29 Feb. 2020).

The method of high-frequency keywords co-occurrence analysis, which is an example of co-word analysis [cf. 12], was used to identify leading and emerging topics within the research field. The studies by Guo and associates [13] and Lis [14,15] were used as benchmarks to design the study procedure and the paper structure. The VOSviewer software [16,17] supported the analysis process and visualization of its findings. The publications comprising the research sample provide in total 5,200 keywords. Among them, there are 3,992 expressions which occurred only once. The minimum number of high-frequency keywords to be taken for co-occurrence analysis (89) and the relevant threshold of the minimum number of occurrences (10) were calculated in accordance with the formula recommended by Donohue [18] as cited in Guo et al. [13]. The number of 10 occurrences is achieved by 100 keywords. Among them we excluded expressions related to research and publishing processes (e.g. ‘article’, ‘review’, ‘research’, ‘qualitative research’, ‘scale development’, ‘human experiment’, ‘case study’). Therefore, finally, 93 expressions were included for further analysis. The parameters of VOSviewer used for analysis are presented in Table 2.

Table 2. VOSviewer parameters used for analysis

Item	Characteristic/ value
Type of analysis	Co-occurrence analysis
Unit of analysis	All keywords
Counting method	Full counting
Method of normalization of strength of the links between items	Association strength method
Layout	
Attraction	2 (default setting)
Repulsion	0 (default setting)
Clustering	
Resolution parameter (detail of clustering)	1 (default setting)
Minimum cluster size [N]	1 (default setting)
Merging small clusters	Switched on
Visualization	
Scale	1.00
Weights	occurrences
Labels size	0.50
Maximum number of lines	1000
High frequency keywords used for analysis [N]	93
Minimum occurrences of a keyword used for analysis [N]	10

Source: Own study.

Results

Thematic clustering

The leading keywords within the research sample, ranked by the number of occurrences, are: ‘sport management’ (235 occurrences), ‘sports management’ (145), ‘sport’ (126), ‘sports’ (114), ‘management’ (66), ‘human’, (52), ‘governance’ (32), ‘football’ (32), ‘physical activity’ (31), ‘marketing’ (31), ‘sport marketing’

(31), and 'gender' (31). Table 3 enumerates top 20 high-frequency keywords in the sport management research field, including their bibliometric characteristics such as the number of occurrences, the number of links, total link strength and average publication year.

Table 3. Top 20 high-frequency keywords in the sport management research field (sorted by the number of occurrences)

Keywords	Occurrences	Links	Total link strength	Average publication year
sport management	235	79	290	2014.38
sports management	145	57	199	2013.80
sport	126	66	253	2014.16
sports	114	52	266	2013.72
management	66	41	97	2013.83
human	52	38	188	2012.12
governance	34	19	35	2014.97
football	32	19	29	2015.28
physical activity	31	24	58	2015.55
marketing	31	24	57	2014.77
sport marketing	31	26	50	2013.48
gender	31	29	48	2013.61
social media	30	21	40	2017.47
sport policy	29	20	24	2014.90
information management	27	15	64	2014.48
corporate social responsibility	27	20	33	2013.89
physical education	25	30	80	2012.36
education	25	22	66	2014.76
satisfaction	25	23	45	2015.36
team identification	25	13	18	2015.68

Source: Own study based on data retrieved from Scopus and analyzed with the use of VOSviewer (29 Feb. 2020).

Fig. 1. Co-occurrence network of high-frequency keywords in the sport management research field
Source: Own study based on data retrieved from Scopus and analyzed with the use of VOSviewer
http://sport.umk.pl/pliki/Fig1_1589197058.png (29 Feb. 2020).

Network visualization function of VOSviewer is employed to identify the leading thematic areas of scientific inquiry in the sport management research field (Figure 1). The composition of the identified thematic clusters is presented in Table 4. The clusters grouping high-frequency keywords are labelled as: (1) professional sport management, (2) physical activity and health, (3) sports staff, (4) IKM in sport management, (5) governance in sport, (6) sport education and learning, (7) humans in sport, (8) fans in sport. The map of co-occurrence network visualizes the prominence of bibliometric items and relationships among them. The bigger size of the node, the more prominent a given expression is i.e. the more occurrences it has. The closer two items are to each other, the stronger relatedness among them is observed. The keywords of the highest number of occurrences (25 and more) are bolded. Taking into account the findings from the network analysis visualized in Figure 1, it is worth noticing that thematic clusters are regularly distributed over the map and their items are

mostly related to other items within clusters. The most central and prominent nodes in the field, establishing bridges among the clusters, are associated primarily with professional sport management (Cluster 1) and fans in sport (Cluster 8) – ‘sport management’, physical activity and health (Cluster 2) – ‘sport’, and IKM in sports (Cluster 4) – ‘sports’ and ‘sports management’.

Table 4. Clusters of high-frequency keywords in the sport management research field

Cluster number/label/color	Items (N)	Keywords (occurrences)
Cluster 1 professional sport management /red	22	branding (10); communication (10); consumer behavior (12); consumer behaviour (13); corporate social responsibility (27) ; CSR (10); event management (12); fans (14); marketing (31) ; professional sport (14); social identity (10); social media (30) ; sponsorship (27) ; sport events (17); sport fans (10); sport marketing (31) ; sport tourism (14); sporting event (10); sports marketing (12); strategy (11); sustainability (10); team identification (25)
Cluster 2 physical activity and health /green	20	community (12); community sport (11); entrepreneurship (10); Europe (12); health promotion (12); innovation (15); leadership (22); physical activity (31) ; policy (15); social capital (11); sport (126) ; sport clubs (10); sport development (21); sport for development (13); sport participation (21); sport policy (29) ; sport sponsorship (11); sport-for-development (18); volunteer (12); volunteers (20)
Cluster 3 sports staff /dark blue	10	coaching (11); diversity (12); gender (31) ; human resource management (20); management (66) ; motivation (13); organizational culture (11); performance (17); sport organizations (13); women (12)
Cluster 4 IKM in sport management /yellow	10	competition (14); decision making (13); information management (27) ; information systems (10); information technology (11); knowledge management (10); problem solving (10); sport managements (14); sports (114) ; sports management (145)
Cluster 5 governance in sport /violet	9	competitive balance (11); demand (10); football (32) ; governance (34) ; institutional theory (12); intercollegiate athletics (19); Olympic games (19); soccer (13); sport governance (13)
Cluster 6 sport education and learning /light blue	8	curriculum (12); education (25) ; experiential learning (19); higher education (10); pedagogy (10); students (17); teaching (15); training (12)
Cluster 7 humans in sport /orange	8	adult (12); athlete (17); athletes (12); female (16); human (52) ; humans (18); male (17); physical education (25)
Cluster 8 fans in sport /brown	6	loyalty (11); perceived quality (14); perceived value (11); satisfaction (25) ; service quality (20); sport management (235)

Source: Own study based on data retrieved from Scopus and analyzed with the use of VOSviewer (29 Feb. 2020).

Emerging topics

Overlay visualization function of VOSviewer is employed to identify emerging topics of scientific inquiry in the sport management research field (Figure 2). In the map, colors represent average dates of publication. The earliest publications are marked in blue. The brighter the color is, the more up-to-date the publication was issued. The high-frequency keywords of the newest date of publication (2016.00 and beyond) are listed in Table 5. The catalogue includes as well other bibliometric characteristics such as: the number of occurrences, the number of links and total links strength. Taking into account the high-frequency keywords of the newest date of publication, the following emerging topics in the sport management research field are identified: (1) the use of new information technologies (including social media), (2) sustainable development in sport, (3) fan satisfaction, and (4) physical activity (including grassroots).

Fig. 2. Average date of publication of high-frequency keywords in the sport management research field

Source: Own study based on data retrieved from Scopus and analyzed with the use of VOSviewer

http://sport.umk.pl/pliki/Fig2_1589197081.png (29 Feb. 2020).

Table 5. Bibliometric characteristics of the most up-to-date keywords in the sport management research field (sorted by date of publication)

Keyword	Average publication year	Occurrences	Links	Total links strength	Cluster
social media	2017.47	30	21	40	1
sustainability	2017.40	10	13	18	1
sport for development	2017.31	13	8	8	2
demand	2016.70	10	4	6	4
athletes	2016.50	12	22	46	7
sports marketing	2016.33	12	13	22	1
social identity	2016.30	10	7	9	1
sport organizations	2016.23	13	14	21	3
sport-for-development	2016.22	18	9	13	2
community sport	2016.18	11	10	10	2
soccer	2016.15	13	16	24	5
sporting event	2016.10	10	19	24	1
community	2016.08	12	14	22	2
health promotion	2016.00	12	17	36	2

Source: Own study based on data retrieved from Scopus and analyzed with the use of VOSviewer (29 Feb. 2020).

Discussion

The bibliometric study of literature on sport management allows to discover and explore the leading topic areas in the research field. Nevertheless, as already mentioned, the thematic landscape of the amassing research production in the sport management research field has not been mapped thoroughly yet. This observation is confirmed by the analysis of publications indexed in the Scopus database. As of 29 February 2020, there are found 11 publications employing bibliometric methods to study the field of sport management (topic search ('sport management') AND topic search ('bibliometric' OR 'bibliometrics' OR 'scientometrics' OR 'informetrics')). Excluding one of them, which is an erratum, we studied all remaining publications to compare and contrast them with our findings. The first category of publications deals with some specific aspects related to sport management, rather than presents the complete picture of the research field. Shilbury [19] studies strategic management in the context of sport management focusing on the issue of competition. Ciomaga [20] explores the field of sport sociology, referring to the papers published in *Sociology of Sport Journal* and *Journal of Sport and Social Issues* between 2003 and 2011, and he explains the predominant role played by some of leading authors. Durán-Sánchez and associates [21] analyze the scientific output related to the issue of quality management in sports, with the particular emphasis on research productivity and leading contributors. Ciomaga [22] discusses convergence challenges in the sport management research field. Koliada et al. [23] include scientometrics to study "effective management of the interaction of sports teams members by using artificial intelligence ideas". Belfiore et al. [24] apply the general publication profiling methodology [cf. 25] to study the intersections between sport management and educational management. The second category of publications, including the works of Shilbury [26,27], employs bibliometric analysis to find out the position of leading journals in the field. Shilbury assesses the influence of "sport management and marketing journals on sport-related research published in 20 top tier generic management and marketing journals" [27, p. 423]. The another of his studies is aimed to "identify the most frequently cited sport management and non-sport management journals based on the analysis of the [...] manuscripts published in the *Journal of Sport Management*, *Sport Marketing Quarterly*, *European Sport Management Quarterly* and *Sport Management Review*" [26 p. 434.]. The third category of publications explores the sport management research field with the use of bibliometric methods. General publication profiling of the field, including identification of the most productive countries, subject areas and journals, is presented in the work of De la Cruz Del Río-Rama et al. [28]. Ciomaga [29] employs the bibliometric co-citation analysis to map the "directions in which sport management research has [...] evolved" [29, p. 557.]. The findings from of his bibliometric analysis of the scientific output in three sport management journals, published between 1987 and 2020 "point out a number of dominant trends influential over the entire period covered, focused on change in organizations, consumer motivation in sport marketing and diversity in organizations. Less influential trends reflect an interest in the impact of sport events, sport economics and in the status of sport management as an area of research" [29, p. 557.].

In our study, the leading topics in the sport management research field have been identified through the network analysis of co-occurrence of high-frequency keywords listed in the publications indexed in the Scopus database. The leading topic areas of scientific inquiry in the field are: (1) professional sport management, (2) physical activity and health, (3) sports staff, (4) IKM in sport management, (5) governance in sport, (6) sport education and learning, (7) humans in sport, and (8) fans in sport. Discussing the findings of our study it is worth noticing two interesting aspects. Firstly, the topic profiling supported with the co-word analysis proves that sport management is a very broad concept and there is a variety of topics which attract the attention of scholars cultivating this research field. This observation is confirmed by the analysis of systematic literature reviews conducted in the field, which deal with very much focused topics. For instance, Peachey, Damon, Zhou and Burton [30] review leadership studies in the context of sport management. Di Palma, Raiola and Tafuri [31]

discuss the role of sport management in social inclusion of the disabled people. The issue of special needs and inclusion in sport is explored by Di Palma and Tafuri [32]. Wang and Song [33] study the modes of sport management in higher education institutions. Schulenkorf, Sherry and Rowe [34] review scholarly contributions related to sport for development. Secondly, overlapping of some topical areas categorized in our study is observed. For instance, Tomanek [35, p. 138] identifies the following factors of quality in sport: customer satisfaction (fans), benchmarking, sports facilities (infrastructure), sport event, technologies, relationship architecture, knowledge about the sport industry, and competences. Loia and Orciuoli [36] study the use of augmented reality (cf. Cluster 4 i.e. IKM in sport management) in learning in sport (cf. Cluster 6 i.e. sport education and learning).

In our study, we have identified the following emerging (i.e. those with the newest average date of publication) topics in the sport management research field: (1) the use of new information technologies (including social media), (2) sustainable development in sport, (3) fan satisfaction, and (4) physical activity (including grassroots). Considering the aforementioned topics, it may be assumed that due to the achievement of an advanced development level by sport clubs, nowadays sport organizations shift their attention from traditional organizational aspects (e.g. structures) or leadership issues to attracting loyal supporters (including sponsors and the media). The increasing role of information and communication technologies (including social media) and social responsibility interventions (as indicated earlier [cf. 37]) may be interesting areas for further research. Last but not least, the resilience of sport organizations in the context the effects of the COVID-19 pandemic caused by SARS-CoV-2 virus will very likely attract lots of attention of scholars interested in sport management. So far, the pandemic, considered often as a ‘black swan’ i.e. an unexpected incident of enormous impact on the global economy, stopped sport competition in numerous disciplines around the world and resulted in postponing sport events including Tokyo 2020 Olympic Games. As highlighted by Parnell, Widdop, Bond and Wilson [38] “COVID-19 could fundamentally change the way sport operates in the future and requires further analysis. [...] Learning lessons from the crisis, must ensure sport managers and practitioners are better prepared in sport and society for similar events in the future”.

Conclusions

The study has mapped the thematic landscape within the sport management research field. Firstly, the leading thematic areas attracting particular attention of academia and their composition have been recognized. Secondly, the emerging topics in research on sport management have been identified. Thirdly, the findings from keywords co-occurrence analysis have been discussed in the context of other bibliometric studies.

Taking into account the increase in the number of publications in the research field observed in the 2010s, and the lack of other studies dealing with topic profiling, the study aimed at identifying leading and emerging topics within the sport management research field seems to be valuable both for theory and practice of sport management. Mapping the structure of the field and identifying thematic clusters creates added value especially from the point of view of sport management theory. Co-occurrence analysis of high-frequency keywords unveils a variety of topics and approaches cultivated in the field and relationships among these topics. Pointing out ‘hot’ (emerging) topics provides guidance for scholars searching ideas for new, interesting research. From the point of view of business practice, the study develops situational awareness of sport managers highlighting the issues they should pay special attention to and supports them in identifying research gaps to be submitted for exploration in further studies by academia, closing the reciprocal loop between theory and practice.

Discussing the outcomes of the study, its limitations should be taken into account. Employing only one research method hampers quality of any study due to lack of triangulation. Thus, the process of mapping the sport management research field should be continued with the use of other research methodologies such as systematic literature reviews, metaanalysis or other bibliometric methods e.g. research profiling [25]. Due to the bias of the Scopus database to publications written in English, the sample may ignore scientific output produced in languages other than English (cf. Table 1). Therefore, in the future, similar studies based on the databases indexing publications written in national languages are welcome to increase objectivity of analysis. Thirdly, as the pandemic of COVID-19 may be a breakthrough point for sport management, radical re-orientation of research interest in the field seems to be quite likely. Therefore, replication of the study in 2-3 years perspective is recommended in order to notice the dynamic changes in the thematic structure of the field.

Conflicts of interest: The authors declare no conflict of interest.

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