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SPORTS ECONOMICS AND MANAGEMENT: AN ANALYSIS OF FIVE JOURNALS INDEXED IN THE JCR

Economía y gestión del deporte: Un análisis de cinco revistas indexadas en el JCR

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ABSTRACT: Sports economics and management are both areas of study that have grown substantially in the last decades, and this growth has been reflected in the academic community with the emergence of numerous scientific journals in which an extensive body of work regarding these areas has been published. This paper presents a bibliometric analysis of the studies that have been published from 1993 to 2011 in the five publications of the Journal Citation Reports (JCR), Web of Science (WOS) database, that have a direct relationship with sports economics and management. The study presents the authors, collaboration and citation networks, scientific production patterns and frequent topics that were found and an analysis through bibliometric maps that are based on scientific activity. The findings identify a broad topic in the targeted field of study and a large territorial concentration within the research works that were analyzed.

KEY WORDS: sports economics, sports management, bibliometric analysis, citation networks, scientific networks

RESUMEN: *La economía y la gestión deportiva son áreas de estudio que han crecido sustancialmente en las últimas décadas, y este crecimiento se ha visto reflejado en la comunidad académica con la aparición de numerosas revistas científicas en las que se ha publicado un extenso trabajo sobre estas áreas. Este artículo presenta un análisis bibliométrico de los estudios publicados entre 1993 y 2011 en las cinco publicaciones de la base de datos Journal Citation Reports (JCR), Web of Science (WOS), que tienen una relación directa con la economía y la gestión del deporte. El estudio presenta a los autores, las redes de colaboración y cita, los patrones de producción científica y los temas frecuentes que se han encontrado y un análisis a través de mapas bibliométricos basados en la actividad científica. Los hallazgos identifican un tema amplio en el campo de estudio focalizado y una gran concentración territorial dentro de los trabajos de investigación analizados.*

PALABRAS CLAVE: *economía del deporte, gestión deportiva, análisis bibliométrico, redes de citas, redes científicas.*

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1. Introduction

The impact of sports as a social phenomenon is undeniable. The academic and professional study of sports from multiple perspectives has recently grown, generating numerous papers that are related to different disciplines such as *sports management*, *sports economics*, and *sports marketing*. The studies that have been performed in each of these areas have attempted the complex task of establishing precise limits and boundaries for these disciplines, giving rise to substantial controversy among the field's practitioners.

The economic dimension of sports has been as interesting as the sports phenomenon itself. However, framing the discipline that researchers, academics and professionals have defined as *sports economics* has presented a complex task. According to Sánchez and Castellanos (2011), the variety of approaches to the concepts and the controversies that have arisen in establishing boundaries for the field of research, even for sports economists, are evidence of these difficulties. These blurred borders compel sports economists to state that "sports economics does not show clear principles that make it possible to establish unifying directions" (p. 224). They conclude that "sports economics is anything that employs economic or econometric methodology in order to analyze sports data or a sport market or behavior in sport" (p. 225).

The area of sports is a complex and multidisciplinary field that, in a broad sense, can only be understood and addressed from an equally multidisciplinary and inclusive perspective. Accordingly, the *sports management* concept seems to be the only idea that is capable of covering this range of diversity and avoiding the useless border fighting that has erupted between practitioners in traditional areas of study. Shilbury and Rentschler (2007, p.31) state that "sport management does not fit neatly within management, marketing, sociology, economics or law". However, these are the same disciplines that nurture research and knowledge in a field that is defined by its objectives and not by the tools that are used to describe and explain its diverse reality.

Nevertheless, the purpose of this work is not to address the conceptual problems that exist with the terms *sports economics* and *management*. The objective is to provide a new approach to the debate through the identification of the fields and topics that are of interest to researchers and academics in the field of sports economics and management.

Throughout this paper, details about the authors, work teams and the most influential publications will be provided to present an objective view of the current research in this area of the social sciences. The influence is evaluated in relation to citations, which is considered the most objective and reliable measure of the impact of a researcher (Podsakoff, MacKenzie, Podsakoff & Bachrach, 2008).

The foundation of the methodology that has been used relies on the documentary sciences, bibliometry and scientometrics. This study includes a bibliometric analysis of the literature that has been published in journals that are related to the field of sports economics and management with an impact factor on the Journal Citation Reports (JCR) of the Web of Science (WoS). In particular, the study focuses on five publications from its incorporation to the Social Science Citation Index (SSCI) as of 2011: *Journal of Sport Management, International Journal of Sport Finance, Journal of Sport Economics, International Journal of Sports Marketing and Sponsorship* and the *European Sport Management Quarterly*.

The desire of these specialized sports economics and management journals to be incorporated into the SSCI has been evident, as is often the case in other research areas. However, it should be noted that assessing the state of research in a relatively new field through its presence in publications with an impact factor is limited due to the discipline's short life (Shilbury & Rentschler, 2007) and the existence of other measures of research quality.

On the other hand, the evaluation of the publications' quality based on its impact index exclusively is under debate, although is considered an objective evaluation method, widely accepted and valued. The quality and dissemination of the papers published in the journals under study before joining the JCR have contributed to its inclusion to the index without doubt. Consequently, it must be recognized that the selected journals already within the JCR index confers an advantage to the selection process as the quality and dissemination of the journals has already been evaluated. It is agreed that this fact entails an advantage in relation to previous studies. Xiao and Smith (2008) indicate, in relation to the citations analysis in turism sociology and antropology, that "normative theorizing of citation impacts presents challenges to a young and multidisciplinary field such as tourism particularly in terms of boundary definitions of its community, the use of search tools, and the selection of titles or publications for such an exercise" (pp. 66-67). Similarities can be found within the previous quote and the present study.

The first incorporation into the SSCI was the *Journal of Sport Management* in 1993, followed by the *International Journal of Sport Finance* in 2006, and the *Journal of Sport Economics* and the *International Journal of Sports Marketing and Sponsorship* in 2007. Finally, *European Sport Management Quarterly* was accepted in 2008.

Despite the previously mentioned difficulties, the five journals that were selected allow us to precisely define the limits and boundaries of the study as compared to studies in which the application of other searching criteria may have increased errors. This criterion can also avoid the conflict between research fields that was explained above and can also help to avoid the difficulties that can arise in identifying an author's affiliation with the diverse research fields that are included in the broad definition of the *sports management* or *sports economics* concepts.

Scientific publications provide information about the development of various disciplines. They can reveal both the temporal development and the evolution of areas or topics of interest for researchers and academics. The main objective of this study is to provide the basic bibliometric data of the published articles to facilitate a better understanding of the relationship between the different fields of study, identify the social networks that have been established between the main actors that are involved in the production of the work, and help to unravel the patterns that have been established between people, concepts and/or information sources.

2. Material and methods

Data collection

The documents for the study were obtained from the Social Science Citation Index (SSCI) by means of the Web of Science (WoS). To select the journals that have been included in the bibliometric study, a qualitative criterion was used: the *aims and scope* of every journal that was included in the *hospitality, leisure, sport* and *tourism* categories were analyzed by an academically experienced, expert panel in sports management. The fundamental criterion assumed by the committee was to select journals that directly related to a *sports economics* and/or *management* topic.

The field *Title* was employed to search for every publication in the five journals that were selected by the committee in which the precise name of each publication was introduced. As a safety measure, the same search was repeated using the ISSN.

The study is limited to research in a strict sense, including original and review articles, but excluding *letters*, editorials, book reviews, abstracts, reprints and news, and bibliographic articles.

The search was done on February 7, 2012. In total, 803 articles were collected. The search results were stored as *plain text* files for further analysis.

Bibliometric analysis, network construction and citation maps

Prior to beginning the bibliometric analysis, duplicate records were examined and the authors' names were standardized (especially those names that included initials) to avoid problems. There have been frequent incidents of confusion that were caused by the absence of authors' initials. The programs that were used considered an author to be different if a name's initial had changed. This completely modified the actual number of authors, the number of publications assigned to each one, and every related calculation (including partnerships, firms, and collaboration index). In the case of institutions, duplications have also been found due to the use of different abbreviation forms in their names.

To find a solution for the synonymy and homonymy problems, other fields such as an author's address were used (Jensen, Rouquier & Croissant, 2008). Because the WoS database does not provide the addresses of all of the co-authors, searching the

internet to clarify questions was required in some cases. The standardization of the institutions was conducted using their official names as they appear on their own web pages.

To perform the bibliometric analysis and network construction, two different programs were used: HistCite (version 10.12.6, HistCite Software LLC, New York, USA) and Bibexcel (version 2011-02-03, Olle Persson, Umeå University, Umeå, SWE).

The analysis was elaborated in three phases: (a) performing a basic bibliometric indicators calculation, (b) building co-occurrence networks and (c) generating citation maps.

The following bibliometric indicators were calculated in the first phase:

- Scientific productivity ranking and authors' collaboration patterns: number of papers that were published, number of authors, citation analysis, collaboration index or average number of authors per paper, number of employees, production by countries and production by institutions.
- Journal production analysis: number of published papers, number of citations in the documents retrieved (Total Local Citation Score: TLCS), citations in other WoS journals (Total Global Citation Score: TGCS).
- Common words analysis: terms contained in *keywords* and their co-occurrence.

In the second phase, the following co-occurrence networks were built: (a) co-authorship, (b) co-word and (c) co-citation.

Every co-authorship or author combination by pairs was identified. That is, in a single author's publication, a co-authorship does not exist; with two authors, it exists only as a co-authorship relationship; with three authors, three relationships exist (A with B, A with C and A with C); with four authors, six relationships (A with B, A with C, A with D, B with C, B with D and C to D), and so on (Agulló-Calatayud, Gonzalez-Alcaide, Valderrama-Zurián & Aleixandre-Benavent, 2008). Word co-occurrence was also calculated in this phase using the field *keyword*.

The co-word identification criterion is the same as that which was used for co-authorship. Finally, the same analysis was employed in this phase for the CR (*Cited References*) field.

In the third phase, a citation map was generated using the CR field. This network shows how the articles from the retrieved series cite each other.

For every case, self-citations have been considered and accounted for (both for authors and workgroups).

To represent the scientific networks and the citation maps, the program Pajek was used (version 1.28; Batajelj & Mrvar, University of Ljubljana, Ljubljana, Slovenia). The generated networks showed a large number of nodes, which hindered their representation. To simplify the display that highlighted the most conclusive results, only the cases that exceeded a certain threshold were represented (Peset, F., Ferrer-Sapena, A., Villamon, M., Gonzalez, L.M., Toca-Herrea, J.M. & Aleixandre-Benavent, R., 2013). The threshold that was used for each of the networks can be found in the results.

In addition to the scientific networks and citation maps, a citation density map was generated with VOSviewer (version 1.3.2; NeesJan van Eck & Ludo Waltman, Leiden University, Leiden and Erasmus University, Rotterdam, Netherlands). This form of representation employs the same citation map that was calculated in the third phase of the study, but it is represented by a color map. The color of each point on the map depends on an item's intensity at that point. The point density on the map was calculated using the number of nearby items and their weight (using a Kernel Gaussian function). A more detailed explanation of this algorithm can be found in Van Eck and Waltman (2010). The greater the number of items that are close to a point, the closer the color of that point is to red. Alternatively, the smaller the number of items that are close to a point and the lower the weight of those items, the closer the color of that point is to blue.

3. Results

Journals, countries and institutions

The search in the WoS database yielded a result of 803 articles, of which 780 were original and 23 were reviews. All of the articles were published in English. As can be seen in Table 1, the differences in the number of articles per journal are important, but the only explanation for those differences is the year of their incorporation to the SSCI.

Table 1. The year of incorporation to the SSCI, articles per journal, local and global citations, and the local and global citations average per published article

JOURNAL	Y.I.	ÍTEMS	TLCS	TGCS	TLCS/Recs	TGCS/Recs
JOURNAL OF SPORT MANAGEMENT	1993	351	775	1704	2.21	4.85
JOURNAL OF SPORTS ECONOMICS	2007	183	129	261	0.70	1.43
INTERNATIONAL JOURNAL OF SPORT FINANCE	2006	108	80	135	0.74	1.25
EUROPEAN SPORT MANAGEMENT QUARTERLY	2008	86	40	113	0.47	1.31
INTERNATIONAL JOURNAL OF SPORTS MARKETING & SPONSORSHIP	2007	75	8	21	0.11	0.28
		803	**1032**	**2234**	**1.29**	**2.78**

This explanation also justifies the sharp rise in the number of items in certain years (see Figure 1). The annual average for articles that were published during the first five years that were analyzed (1993-1997) is 9.2 articles per year, as compared to the 117.4 articles per year for the last five years that were analyzed (2007-2011). However, we should note that at the time of the search (February 7, 2012), some articles corresponding to 2011 had yet to be added to the SSCI: volume 11 of the *European Sport Management Quarterly* (numbers 3, 4 and 5) and two volumes of the *International Journal of Sports Marketing and Sponsorship* (volume 12, number 4 and volume 13, number 1). This circumstance requires consideration.

The first year of publication is 1993, with two articles that were registered, both of which were published in the *Journal of Sport Management*: Cleave (1993) and Berret, Slack, and Whitson (1993).

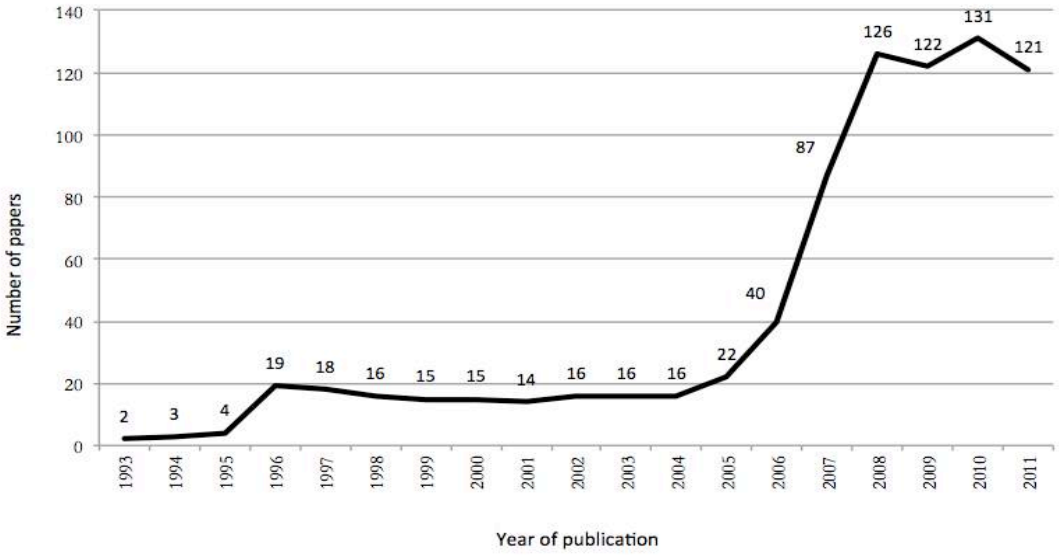

Figure 1. The number of works published per year

The analysis of the local citations (TLCS: the number of times that an article is cited by another in each of the five analyzed journals) and the global citations (TGCS: the number of times that an article is cited in any publication that is included in the SSCI, including the previous) shows an uneven behavior.

Overall, the analyzed articles were cited a total of 2234 times, with a local citation average of 1.29 and a global citation average of 2.78.

In Table 1, we see that the articles that were published in the *Journal of Sport Management* (JSM) reach an average of 2.21 local citations per published article, which is significantly higher than those that were obtained by the others. The *Journal of Sports Economics* (JSE) achieves an average of 0.70; the *International Journal of Sport Finance* (IJSF) reaches 0.74; the *European Sport Management Quarterly* (ESMQ) comes to 0.47; and the *International Journal of Sports Marketing & Sponsorship* (IJSMS) has 0.11 local citations per published article.

The global citations show a similar trend. Again, JSM's average is much higher than the others, with 4.85 global citations per published article; the others are divided as follows: JSE 1.43, IJSF 1.25, ESMQ 1.31, and IJSMS 0.28 global citations per published article.

The *Journal of Sport Management* was the first to be incorporated into the SSCI in 1993, and that fact gives that journal the advantage of having the largest number of citations received, both locally (775) and globally (1704). The other publications' recent incorporation into the SSCI appears to be the most probable reason to explain the existing differences in the local and global citations that were observed in comparison to the *Journal of Sport Management*. It is important to keep in mind that citations and the subsequent impact represents the final step of a long process.

However, there are also differences in the number of local and global citations that were received among the other journals that were studied, despite the slight differences between their incorporation years (2006-2008), as well as the average in relation to the number of articles that were published. The *Journal of Sport Economics* (integrated in 2007), with 129 local citations and 261 global citations, stands out against the *International Journal of Sport Finance* (2006), which had 80 and 135 local and global citations, respectively, the *European Sport Management Quarterly* (2008), which had 40 and 113 local and global citations, respectively, and the *International Journal of Sports Marketing & Sponsorship* (2007), which had 8 and 21 local and global citations, respectively. Thus, there is a noticeable difference between the first and the last journal.

Anyhow, a conclusion about journal relevance that is based on these data is a complex exercise for several reasons: the evaluation system of the publications' impact, despite being widely accepted, has also been criticized (Shilbury, 2011), and even in the field of sports management, it should be noted that the traditional evaluation system for publications impairs the development of this research field, highlighting the fact that alternative evaluation systems can and must be taken into account when assessing the impact and quality of the publications (Shilbury & Rentschler, 2007).

Regarding production by country, the United States notably leads in production, with 458 works in total, followed by Canada, with 129 articles. The United Kingdom ranks third, with 64 articles, followed by Australia with 56, Germany with 36, South Korea with 23, Spain with 21 and Belgium and Norway with 17 articles each. HistCite located a total of 40 countries with production (the *unknown* registry, recorded by HistCite in a total of 50 registries, was purged and removed from the *address* field in every registry). Seventy-nine and four tenths percent of the total production is accumulated by the first five countries, fulfilling the Pareto distribution by which sociological phenomena are always polarized between the two indexes of 80% and 20%. This figure reaches 89.4% of all production if the ten top-ranked countries are considered. Derived from that calculation, the top-ranked countries denote a clear

hegemony and a high concentration of production, especially highlighting American and Canadian production (which combined represent 5% of the existing countries and produce 62.7% of all articles).

The rankings of Canada, the United Kingdom and Australia indicate a clear Anglophone hegemony in the studies.

In relation to other studies, the American hegemony is also evident in the bibliometric study on sports economics research of Sanchez and Castellanos (2011), developed with a different methodology. In both studies, when it comes to production by country, seven of the ten first places in the ranking match, although the order varies. Methodological differences and study selection criteria influence these variations (their search starts with the topic *economics* in the SSCI and lately has been extended to include *sports sciences* and other general topics in the database, finally performing a refined search by the most prolific authors in the economic journals). In any case, a high rate of coincidence can be seen in this field of study, such as the coincidences that can be observed to some extent in other bibliometric indicators. Again, the methodology and variations in the object under study influence the differences. A country's hegemony also determines the study's contents and topics, having an important impact on the rest of the publications.

Production by institutions follows a similar pattern, with a clear American hegemony. HistCite records 516 registries in total, although cases of duplication have been found and corrected. A review of universities with at least eight publications in the search (there are 32 in total) has been conducted. Nineteen of them are from the United States; eight are from Canada; two are from Australia; one is from Spain; one is from Switzerland; and one is from Belgium. The University of Alberta (Canada) had the most entries (35), followed by Florida State University with 30; Ohio State University also had 30. The University of Florida and the University of Texas each have 27 entries. The first university outside of North America, in seventh place, is Griffith University (Australia), which has 20 entries. The first European university is the University of Oviedo (Spain), with ten entries in 19th place. 19 of 32 of the most productive institutions are American, although the University of Alberta (Canada) leads the ranking as the only institutional counterpoint to the American institutional hegemony, which occupies the second to the sixth places, inclusive, in production.

Productivity analysis, collaboration patterns and citations received by the authors

The analyzed articles were produced by a total of 1,082 authors, 28 of which have produced seven or more articles. The 28 most productive authors have collaborated with 283 other authors, with an average of 10.11 collaborators per author. The complete results of this analysis, with collaboration indexes, are shown in Table 2.

Table 2. The most productive authors (≥ 7 articles), with an institutional affiliation and collaboration patterns

Table 2. Most productive authors (≥ 7 items), institutional affiliation and collaboration patterns

	Authors	Articles	Signatures	Collaboration index [a]	Contributors [b]	Institutonal affiliation [c]
1	Chelladurai P.	17	35	2,06	15	Ohio State Univ. USA.
2	Slack T.	14	31	2,21	10	Univ Alberta, Canada.
3	Trail G.T.	12	33	2,75	14	Seattle Univ, USA.
4	Berri D.J.	11	33	3,00	18	So Utah Univ, USA.
5	Humphreys B.R.	11	22	2,00	7	Univ Alberta, Canada.
6	Cunningham G.B.	10	24	2,40	10	Texas A&M Univ, USA.
7	Doherty A.J.	10	20	2,00	9	Univ Western Ontario, Canada.
8	Mahony D.F.	10	29	2,90	12	Kent State Univ, USA.
9	Mason D.S.	10	21	2,10	8	Univ Alberta, Canada.
10	O'Reilly N.	10	35	3,50	16	Univ Ottawa, Canada.
11	Kim Y.K.	9	27	3,00	13	Florida State Univ, USA.
12	Zhang J.J.	9	29	3,22	17	Univ Florida, USA. Shanghai Univ Sport, PR China.
13	Funk D.C.	8	22	2,75	9	Griffith Univ, Australia.
14	Green B.C.	8	20	2,50	10	Univ Texas Austin, USA.
15	Kesenne S.	8	13	1,63	4	Katholieke Univ Leuven, Belgium.
16	Ko Y.J.	8	25	3,13	10	Univ Florida, USA.
17	Krautmann A.C.	8	17	2,13	7	Depaul Univ, USA.
18	Parent M.M.	8	16	2,00	7	Univ Ottawa, Canada.
19	Paul R.J.	8	20	2,50	5	St Bonaventure Univ, USA.
20	Rascher D.A.	8	25	3,13	9	Univ San Francisco, USA.
21	Weinbach A.P.	8	20	2,50	5	Syracuse Univ, USA.
22	Chalip L.	7	16	2,29	8	Univ Texas Austin, USA.
23	Dixon M.A.	7	21	3,00	11	Univ Texas Austin, USA.
24	Hums M.A.	7	23	3,29	10	Univ Louisville, USA.
25	James J.D.	7	19	2,71	10	Florida State Univ, USA.
26	Mondello M.	7	19	2,71	11	Florida State Univ, USA.
27	Nadeau J.	7	30	4,29	13	Nipissing Univ, Canada.
28	Solberg H.A.	7	15	2,14	5	Sor Trondelag Univ Coll, Norway.

Note: [a] Relation signatures/articles; [b] Total number of collaborators (the indicator shows the size of the team that collaborates with a particular author); [c] The most recent affiliation shown in the articles studied has been used

Chelladurai, Slack and Trail are the most productive authors. To properly size their production (17, 14 and 12 works, respectively, published in the studied journals) we must remember that from the 1,082 authors that were identified in the study, 806 have published only once and 138 have published twice.

The authors' research fields include different areas of sports management and economics such as satisfaction and service quality, organizational administration and management, consumer behavior, finance, support, competitive balance, attendance, outcome uncertainty, and even the study of motivational and social variables such as gender or ethnicity and their relationships to various aspects of the economy and sports management.

The citation of authors has been studied locally and globally. Locally (within the works studied in this paper), the most cited authors are Slack (65 citations), Funk (43 citations), Frisby (38 citations), Chalip (37 citations), Gladden (34 citations), and Chelladurai and Trail (with 29 citations each). Globally (in every publication included in the SSCI), the most cited author is Chelladurai (with 119 citations), followed by Slack (118 citations), Crompton (105 citations), Frisby (84 citations), Chalip (79 citations) and Doherty (74 citations). Regarding citations, recognition by means of citation does not necessarily mean a larger production. In fact, some of the

most cited authors are not among the most productive, as there are the cases of Frisby, Crompton and Gladden.

Co-authorship networks

Co-authoring is widely used in bibliometrics, as it certainly represents a connection and awareness among authors (Newman, 2001); therefore, it is a way of identifying invisible colleges and the relationships among schools. The threshold of two or more works that were written in collaboration has been established to represent a co-authorship network. Using this criterion, a total of 133 authors grouped in 45 clusters were found. Figure 2 shows the groups that were obtained based on this criterion.

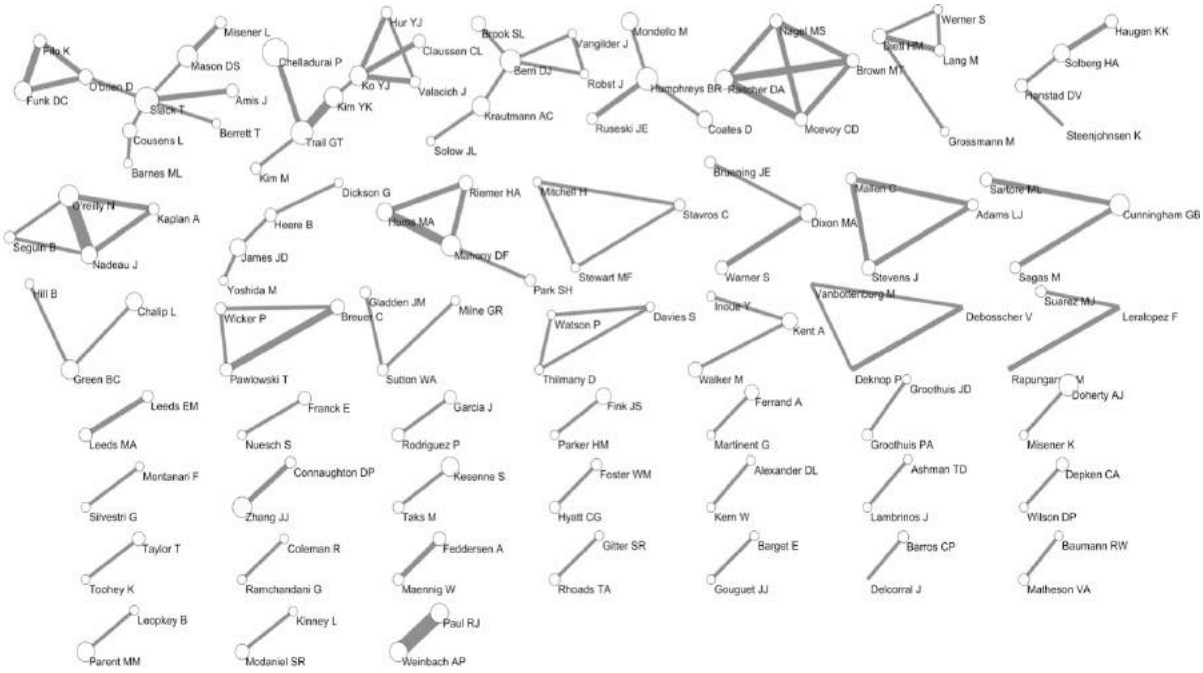

Figure 2. The published work co-authorship network (threshold: ≥ 2 works in collaboration)

The largest group has ten members. There is also a group with eight authors, a group with six authors, seven groups of four authors, eleven groups of three authors and 24 groups of two authors.

The most productive authors hold prominent places in different groups, although their positions are not necessarily central. Also, the number of co-authorships varies significantly.

The largest group (ten authors) includes Trevor Slack, Daniel S. Mason and Daniel C. Funk (authors who hold positions two, nine and thirteen in production, respectively). Trevor Slack has the largest number of collaborators with whom he shares at least two co-citations in this group, while the highest number of co-authorships, in this group, is held by Funk and Filo, who co-authored with four others in the studied group.

The second largest group (eight authors) includes Packianathan Chelladurai and Galen T. Trail. Chelladurai is the first producing author in the present study, although he has one of the lowest collaboration indexes, 2,06, as we can see in Table 2. Galen T. Trail and Yu Kyoum Kim show five co-authorships in this group, and both of them constitute the central nucleus around which the collaboration group is formed.

David J. Berri is in the third group of six authors, Brad R. Humphreys is in the fourth group of four authors, and both Berri and Humphreys perform a similar role within their respective groups.

However, the highest rates of co-authorship are found in smaller working groups. Between Mahony and Hums (in a group of four authors), five co-authorships are shown. Additionally, smaller workgroups display the highest co-authorship indexes. Nadeau and O´Reilly signed seven co-authorships, belonging to a group of four authors, and, similarly, the highest co-authorship score is held by Weinbach and Paul with eight co-authorships, with the group being formed solely by those authors.

The highest collaboration rates correspond to Nadeau, Hums and Zhang. The collaboration patterns between authors that were obtained in the co-authorship network show that the most cited authors belong to the largest cluster, which seems to demonstrate a relationship between the size of the collaboration network and the citation level of the authors. However, higher levels of co-authorship correspond to smaller working groups (which are represented by the smaller clusters).

The analysis of authors in this study can be approached from different perspectives. It is important to highlight different aspects such as productivity, collaboration (such as co-authorship and authors' collaboration networks) and the authors and works citation indexes. Despite the diversity of the covered topics, it seems that a core of authors is formed, leading both production and influence on the object of study. An observation that should be considered for the evaluation of this work, and for the methodological approach in subsequent studies, is the decision to include, or not include, self-citations (both author and workgroup) in a bibliometric analysis, due to the undeniable impact of this practice.

An analysis of the most common keywords and co-work networks

The total number of different terms that have been identified in the field *keywords* is 1036, although a rigorous review shows certain cases in which acronyms and complete terms are considered to be different (for example, the NFL and *National Football League).* No corrections have been made to the field *keywords* to enforce the criterion that was established by the author, but this fact should be noted.

From the total number, 843 terms are only mentioned once and just 35 appear five or more times in this field, a fact that should be highlighted. Within this high-frequency group, the most repeated term is *football,* with 25 repetitions, followed by *competitive balance* on 24 occasions and *soccer* on 22 (see Table 3).

Table 3. *Keywords* frequency (threshold ≥ 5 times in the field *keyword*)

N	KEY WORD	N	KEY WORD	N	KEY WORD
25	football	7	sports marketing	5	college football
24	competitive balance	7	economic impact	5	moral hazard
22	soccer	7	sports sponsorship	5	NCAA
18	sports	7	NBA	5	efficiency
18	attendance	7	National Hockey League	5	hockey
15	baseball	6	demand	5	National Football League
15	major league baseball	6	uncertainty of outcome	5	NFL
12	sponsorship	6	discrimination	5	Olympic Games
12	sports economics	6	efficient markets	5	gambling
9	incentives	6	sports leagues	5	golf
8	revenue sharing			5	stadiums
8	basketball				
8	NASCAR				
8	market efficiency				

Sports activities have a major presence in *keywords* because *baseball, major league baseball, basketball, NASCAR* or *NBA* are all terms that rank first in their number of appearances, excluding those that have been previously mentioned.

On the other hand, management, economics, efficiency and results-related terms such as *attendance*, *sponsorship*, *incentives*, *revenue sharing*, *demand, uncertainty of outcome*, *economic impact,* and *efficiency* stand out.

Finally, we can identify a third group of more general terms such as *sports, sports economics, sports marketing, sports sponsorship, stadiums,* and *human capital*, that define general fields of study, although being generalist make them ambiguous.

To learn more about the most frequently used terms, a co-word analysis has been conducted, building a network representing those co-occurrences with a minimal threshold of two.

As shown in Figure 3, the two most frequent co-occurrences appear between *competitive balance* with *major league baseball* and *competitive balance* with *attendance.*

Regarding the centrality (k) that was observed in the network, the term competitive *balance* presents the most centrality, followed by *football, baseball, major league baseball* and *attendance*. Other terms, such as *sports*, *fan welfare*, *shareholder wealth* or *sport finance*, also held notable scores.

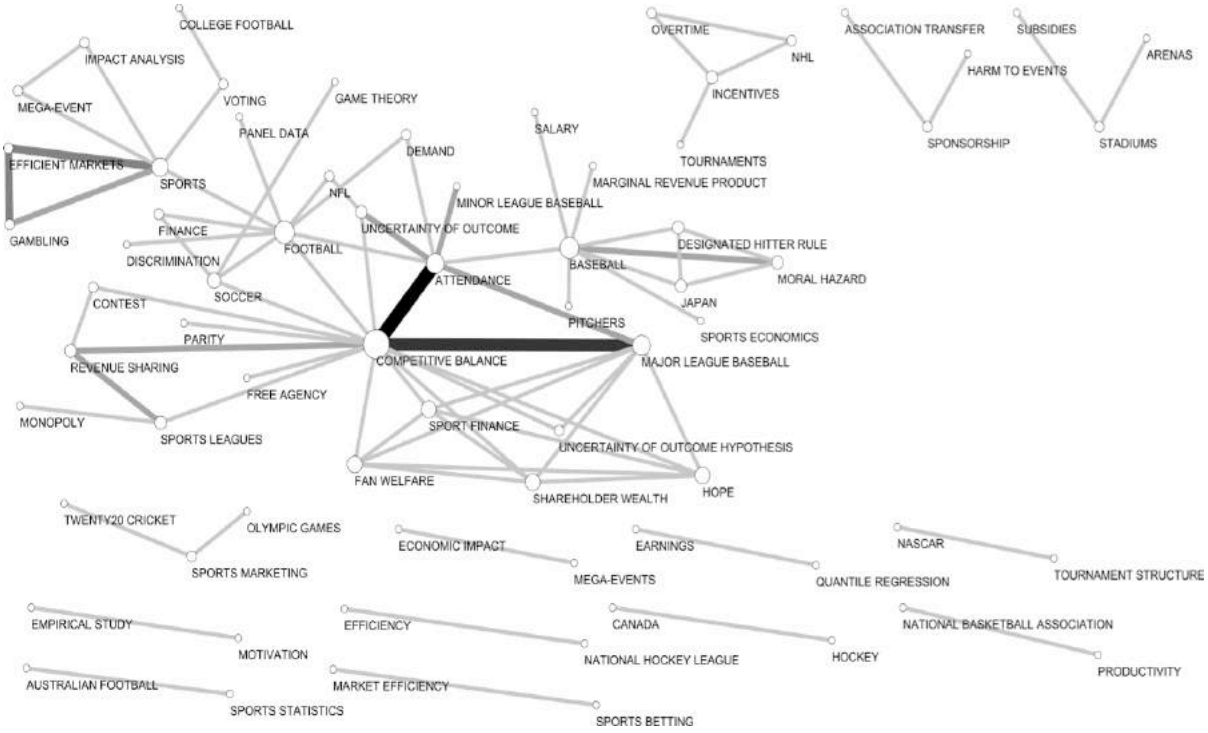

Figure 3. Co-occurrences of the terms displayed in the field Keyword (threshold ≥ 2 co-occurrences)

Note: The gray line thick indicates the number of co-occurrences of terms appearing in the keyword field. The size of the vertices corresponds to the frequency of occurrence of the term in the keyword field.

The *keywords* frequency and the co-word analysis reveal that despite being completely aware of the various interests and fields of study, the area that stands out is competitive balance in professional disciplines and its relationship to attendance. The competitive balance concept is mainly studied through proposals that are aimed at evaluating the concept (Kaplan, Nadeau & O´Reilly, 2011; O´Reilly, Kaplan, Rehinel & Nadeau, 2008), its relationship with benefits distribution (Chang & Sanders, 2009; Dietl, Grossman & Lang, 2011; Kesenne, 2006; Miller, 2007), its relationship with the demands and the support of the audience (Coates & Humphreys, 2010; Fort & Quirk, 2010; Lee, 2009; Levin & McDonald, 2009; Meehan, Nelson & Richardson, 2007; Soebbing, 2008), or a combination of all of these areas.

More peripherally related areas are incorporated, such as benefit distribution, hope, fan welfare, or partners' benefits.

The co-citations network

A co-citations network was developed with a requirement for a minimum six co-citations (Figure 4). The network is formed by five clusters in total with different dimensions. The biggest cluster is formed by sixteen items, the second by thirteen, and the three others have four, four and three items, respectively.

As can be seen in Figure 4, the most frequent co-citations of the larger cluster corresponds to Gwinner and Eaton's work (1999) and Speed and Thompson's work

(2000), followed by the Speed and Thompson (2000) and Meeneghan (2001) co-citation. Keller's work (1993) also shows high frequencies of co-citation in the same cluster of the three previously mentioned works.

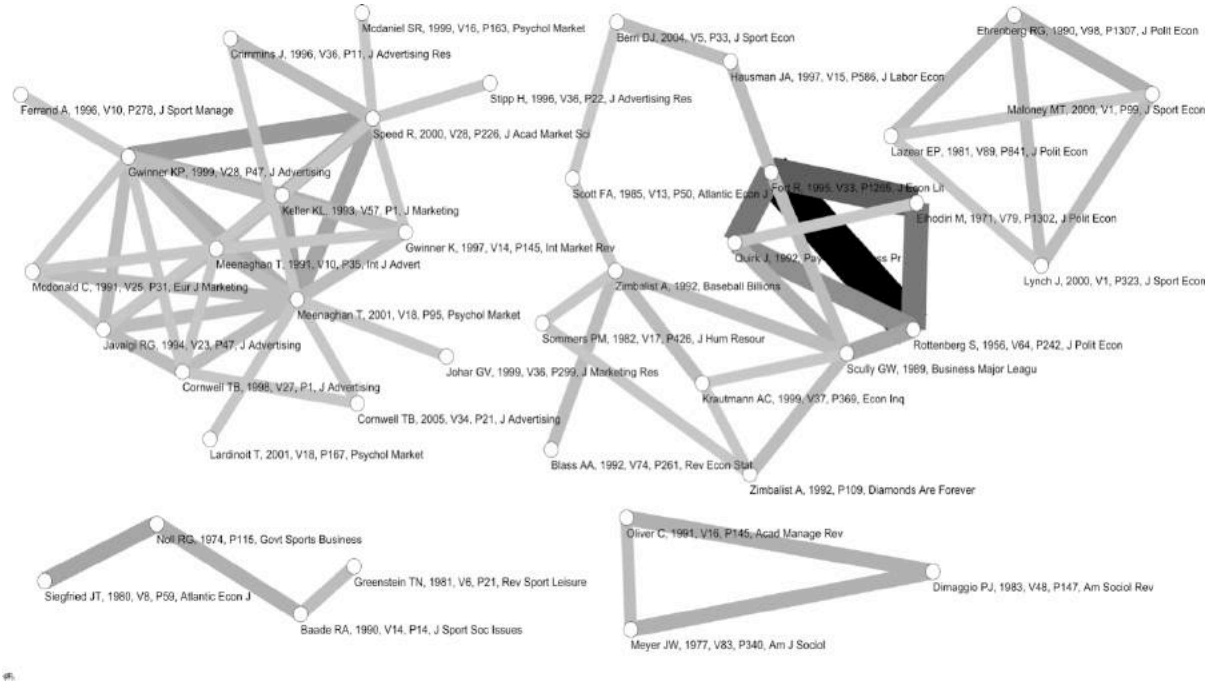

Figure 4. The co-citation map (threshold: six co-citations)
Note: The gray line thick indicates the number of co-citations.

The most frequent co-citation among all the considered articles appears in the second cluster. It refers to the work of Rottenberg (1956), the most cited article according to the *cited reference list* of the HistCite, and Fort and Quirk (1995). In the same cluster, the Rottenberg (1956)–El Hodiri and Quirk (1971), Fort and Quirk (1995)–El Hodiri and Quirk (1971), Fort and Quirk (1995)–Quirk and Fort (1992) and Rottenberg (1956) – Quirk and Fort (1992) co-citations also show high frequencies that stand out from the others. The three smaller clusters also show lower frequencies of co-citation.

Citation map and citation density

Locally, the citations network (Figure 5) is intended to show the cases in which at least four members are involved, having at least three citations of their published work.

Locally, the work with the most citations belongs to Crompton (1995). The article examines what, according to the author, are the common mistakes that are made when evaluating the economic impact of the events and infrastructure that are related to sports as a basis by which to justify public support during times of economic austerity. This article was cited locally ten times.

The following most locally cited works are Slack (1996) and Kikulis and Slack (1995), with six citations each. Slack's work in 1996 calls for the development of "a body of

knowledge on the structure and operation of the many and various organizations that constitute the sport industry " (p. 98), which, according to the author

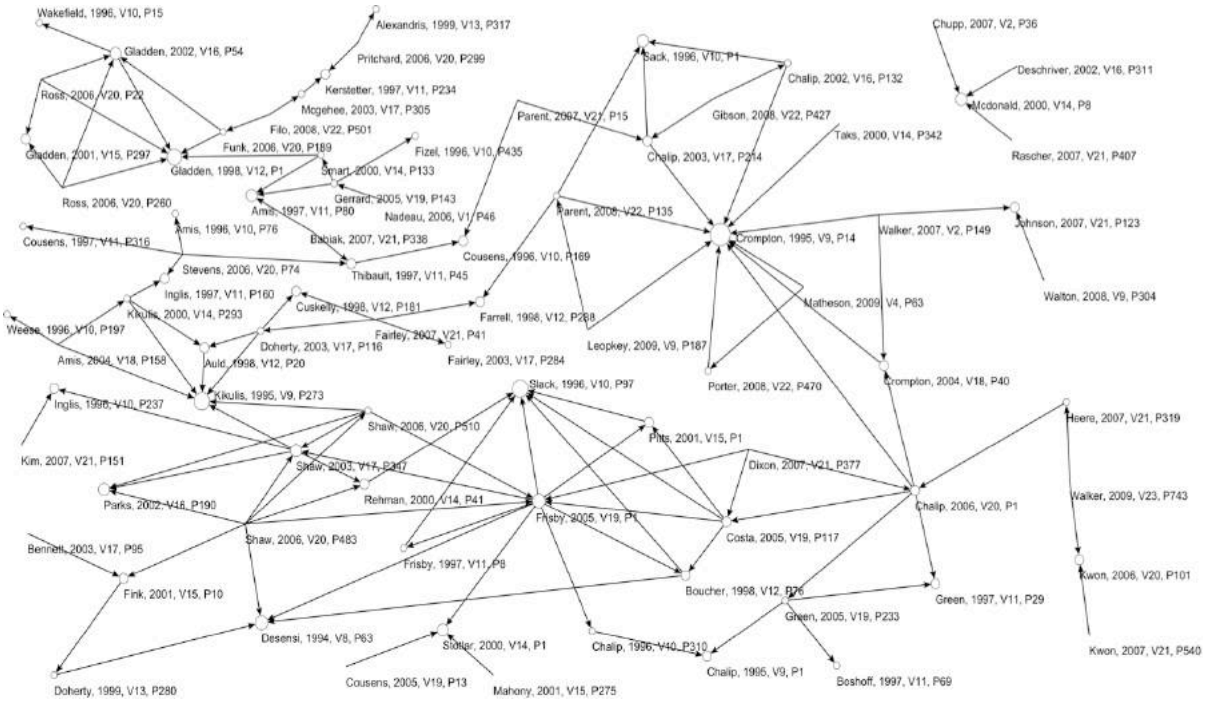

Figure 5. Citation maps among published work within the search (threshold: at least a four-member network and three work citations).

Note: The size of the vertices corresponds to the frequency of citations

"... not only require us to broaden the range of organizations that we study, it will also necessitate a considerable change in the theoretical bases of our work, a broaden of the places we publish and present our research, a re-examination of the topics we study and the adoption of new approaches to doing research" (p. 98-99).

Kikulis and Slack's work (1995) evaluates organizational change in 36 Canadian sports federations, moving from amateur to professional management.

Additionally, a local citation density map has been developed (Figure 6). The colour where an item of the map is located depends on its importance and the amount of nearby items. As the density increases, the colour becomes closer to red. As the density decreases, the colour becomes closer to blue. It is notable that a work's centrality in the network is considered as one would consider grade centrality, that is, considering every work's connection (entrance and exit).

From this perspective, Frisby (2005) and Crompton (1995) hold the most relevant works. Both are located in positions with the highest density of close network items.

The recognition of various studies as influential in this work has been possible due to the employment of various methods and network representation forms.

Logically, the articles that appear in a prominent position on the citation map among works that has been included in the search (Figure 5) correspond with authors that are included in the previous relation, in particular with Slack, Crompton and Frisby.

These authors are positioned with a high centrality in the citations network.

The co-citation networks also show other works with a major influence on the works that were studied.

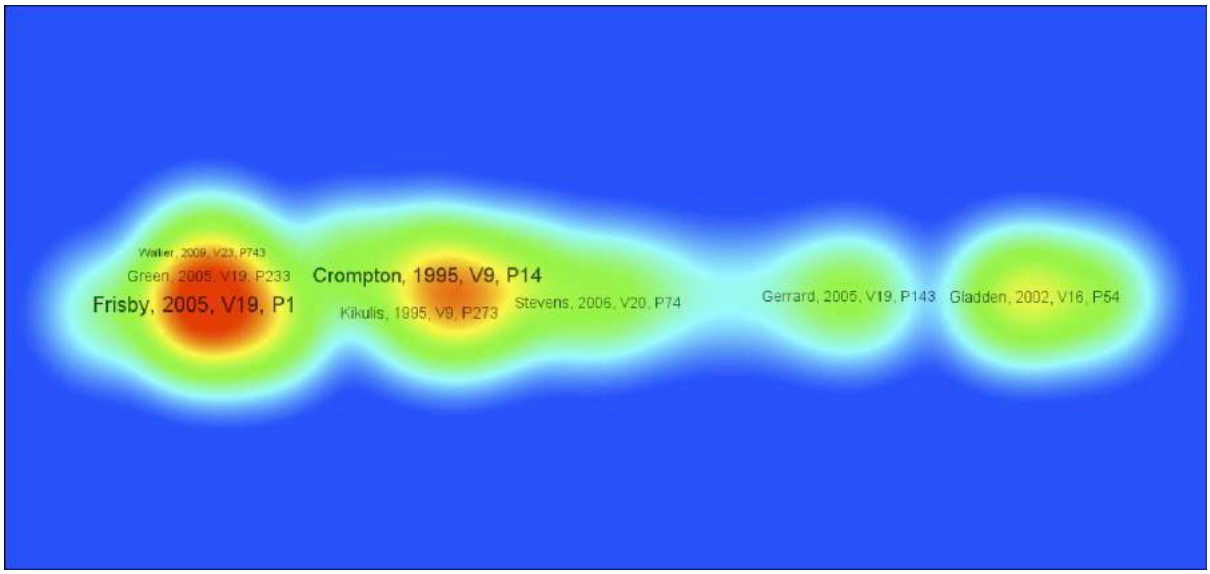

Figure 6. Local citations density map

This influence is also evident in the co-citation map, which represents the network elements that have exceeded a minimum threshold of six co-citations. The two main clusters identify two distinct areas of work, which are two of the most common topics in our study: (a) the first cluster identifies work regarding sponsorship, image and brand value that is related to the field of marketing, (b) the second cluster corresponds to strongly economic-oriented work that is related to competitive balance, benefits and professional sports performance.

4. Discussion

At the beginning of this paper, the aim of the study has been described as provide a new approach to the debate through the identification of the fields and topics that are of interest to researchers and academics in the field of sports economics and management.

In fact the problem faced is not the definition of an area of knowledge but rather its own constitution, the design of its contents and the layout of its future. The previously mentioned discussions around its limits and boundaries are just secondary arguments around a field with no fences whose extension constantly varies with every new contribution. As indicated by Jugde, Cable, Colbert, and Rynes (2007, p. 491) "If the most important outcomes of science are the creation an

dissemination of new knowledge, citations not only document the history of an investigation or research area, but also project its future". In this sense, the discussion of this paper and the implications of the information extracted from the analysis in particular, can be organized around two main ideas: (a) how knowledge is created and disseminated in sports economics and management and (b) what can be found from the citations analysis.

As a preliminary observation it is to be recognized the limitations imposed by the fact of selecting five journals. Clearly, there are numerous general publications related to this area of knowledge in journals of economics, management or marketing which also may be indexed or not in JCR. Research by Shilbury (2011) can be taken as an example. Selection criteria for the publications under study have been discussed as well as its strengths and weaknesses.

Regarding the first issue, knowledge generation follows a territorial pattern with clear Anglo-Saxon interest topics. The American and Australian hegemony is outstanding and the Universities leading the publication rankings are evidence of it. The frequency analysis of keyword or co-word terms show a clear interest on studies related to professional sports and its economic implications. Local co-citations networks clearly identify two clusters of interest: marketing related works and those with a strong economic focus. A quick review of the most cited papers' contents corroborates the above.

But, to what extent these data projects the future? The second topic of interest in this paper is discussed facing this issue: citations. Here, the problem addressed is related to the influence of both authors, and institutions or magazines, and their relation to the current and future state of this research field.

Podsakoff et al. (2008) state that citations are the most reliable reference about the influence of a researcher, over any other indicator, including number of published work. In fact, the amount of papers has no necessarily mean more influence: on the contrary, citations do influence the knowledge area (p. 644). The number of citations, also depends on the number of the authors' published work, followed by the years of experience in the area of knowledge and the members of the journals' editorial board (p. 710). However, the relation between the number of publications and the received citations needs further study.

According with Podsakoff et al. (2008, p. 669) the main impact factor for institutions, is the total number of papers published. In this sense, the institutional pressure to publish work within high impact journals is evident. Finally, journals have a clear interest in receiving a high citations index, as it will finally have an effect on its impact factor. Likewise, journals' impact factor encourages authors to cite work that has been published in those journals, rather than work published in lower impact journals (Jugde et al., 2007, p. 491).

As can be observed, a network of interests and influences is generated within every actor, being difficult to establish to what extent the researchers' interests and topics depend on their own independent initiative or the need to line up with an established *status quo*. It is true that citations seem to lead in a particular area of knowledge, but to determine whose interests serve that path is open to debate.

It should also be noted that some authors recommend more caution when relating citations and impact (Xiao et al., 2008, p.65), or more research to determine factors influencing citations in this area of knowledge, like the author's affiliation, the University´s reputation or the global publications (Shilbury, 2011, p. 34).

The present work studies a reduced group of authors who lead production and impact as we anticipated. The co-authorship networks obtained show the collaboration structures of groups of authors corresponding to the highest levels of production and citations received mainly.

Invisible schools have been identified and it should be noted that co-citation networks suppose an influence and citation data an impact (Xiao et al., 2008). It is also considered that more publications do not necessarily mean more citations.

Other classic patterns remain unchanged in the present study. Podsakoff et al. (2008, p. 710) make a reference to the Lotka's Law in their work, defined in 1926, explaining that 5% of the authors receive 50% of citations at least. The authors also found a high concentration of papers within a small group of authors and institutions (p. 710). We must remember that in the present study, the six most cited local authors receive 237 citations from over the 1032 local citations received from the overall publications. This implies the 0.55% of the authors accumulating the 23% of the citations. Globally something similar happens, the six most cited authors account for a total of 569 citations, accounting for the 25.47% of global citations received by the series under study. Podsakoff et al. (2008) even described the influence of these small groups of authors as disproportionate in the case of his study (p. 710).

The topics of interest, the origin and the structure of production can lead us to ask a series of questions: (a) Is this what is referred in Judge et al. (2007) when they pointed out that the citations show the history of a research area? A brief contemporary history of the sports economics and management is shown in this study. The answer seems to be affirmative. (b) Is this what you the same authors mean when they say that the citations project the future? The answer to this second question will primarily depend on whether the influence patterns exposed have continuity or not. And (c): Do they actually define the topics of greatest interest in these areas of the social sciences? From a classical conformist perspective of the system, the answer is yes. From a broader perspective, at least, the debate must be open.

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