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REVISIÓN / REVIEW

ECONOMIC IMPACT OF SPORT: TOPIC OF GROWING INTEREST FOR THE SCIENTIFIC LITERATURE

IMPACTO ECONÓMICO DEL DEPORTE: TEMA DE INTERÉS CRECIENTE EN LA LITERATURA CIENTÍFICA

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ABSTRACT

The study of the economic impact on the sport as a scientific discipline was born for the identification of the economic benefits of major sports events. Its evolution has led to broader approaches. It has been applied to the study not only of the economic aspect but also the intangible effects in both large and small events, in facilities and franchises. In the present work, the evolution of the study the economic impact of sport science is analyzed using bibliometric during the period 1984-2013. The results from these analyses have been used to prepare a questionnaire in order to get the perception of experts in the field on key aspects of research in the scientific issues. From the work, it can be concluded that the economic impact of sport science is capable of evolution in the area of economics of sport and in a complementary manner in other areas. In addition, this kind of studies has a clear practical application for improving the management of sports events and sporting facilities.

KEYWORDS: economic impact, sports economics, sports events, bibliometric analysis.

RESUMEN

El estudio del impacto económico en el deporte como disciplina científica surge para la identificación del beneficio económico de grandes eventos deportivos. Su evolución se ha dirigido a enfoques más amplios, estudiando no sólo el aspecto económico sino también los efectos intangibles, en grandes y pequeños eventos, instalaciones, y franquicias. En el presente estudio se analiza la evolución del tratamiento del impacto económico del deporte en la ciencia mediante un estudio bibliométrico del periodo 1984-2013. Los resultados obtenidos se han empleado como base para conocer la percepción de los expertos en la temática sobre los aspectos clave de la investigación en este campo. Se concluye que el estudio del impacto económico del deporte tiene capacidad de evolución tanto en el área de la economía del deporte como en otras áreas de estudio. Además estos estudios tienen una clara aplicación práctica en la mejora de la gestión de eventos e instalaciones deportivas.

PALABRAS CLAVE: impacto económico, economía del deporte, eventos deportivos, análisis bibliométrico.

1. INTRODUCTION

The economy of sports is a young field of research. It kicked off in 1956 with the pioneering work of Rottenberg, followed by the works of Neale (1964) and Noll (1974). However, it was the 80s that marked the beginning of the rapid expansion of this field. In this decade the tools of economic impact were first used to study the impact of sports on the economy. Since then, it has become a specific research topic within economics.

Ritchie and Aitken (1984) are pioneers in this area. They present an ex ante analysis of the expected economic impact of the 1988 Winter Olympic Games to be held in Calgary, Canada. Their work is followed by that of Burns, Hatch and Mules (1986) on the economic impact of the 1985 Adelaide Grand Prix. Early studies of the economic impact of franchises and the construction of stadiums were published in 1988 by Baade and Dye (1988a, 1988b) who analyzed whether the economic impact of stadiums and teams was an actual justification for public funding.

In the beginning, research mainly focused on the economic benefits of the events; but soon it evolved and provided a broader multidisciplinary approach (Gratton, Shibli and Coleman, 2006). Since then this important development has also made its way out of scientific literature to spread into and finally become customary in the realization of studies on the impact of sporting events both ex ante and ex post.

The peculiarity of sports as a product creates limitations for the economic analysis of sport (Pedrosa and Salvador, 2003, Bourg and Gouguet, 2010 and Rodriguez, 2012). These limitations happen when tools are applied to study the economic impact of sport (Crompton, 1995 and 2006; Matheson, 2009 and Barajas, Salgado and Sánchez, 2012). Thus, work on this issue also addresses how to solve these limitations, create new tools or use other tools to determine the economic impact of sport on the economy.

As for bibliometric studies on the subject of economic impact in sports, it is the work of Li and Jago (2013) and Saayman and Saayman (2014), which focuses on sporting events. Literature scarcely looks at how this impact has evolved and it neither identifies the different elements that comprise it (events, franchises, clubs, facilities, stadiums) nor the emerging tools and techniques that can be applied beyond existing methodologies.

Consequently, this study aims to analyze the evolution of the economic impact of sports on science. To this end, we first conduct a bibliometric study of the scientific area and then put together a panel of experts to assess this branch of knowledge and its future prospects in scientific research.

2. RESEARCH DEVELOPMENT

This section presents the methodology used to conduct the bibliometric analysis on the of the economic impact of sport. It also explains how the panel of experts was selected, how the questionnaire was designed and how information was collected and analyzed.

2.1. Bibliometric analysis

This paper uses laws and common indicators in the area of bibliometrics to study the scientific development of the discipline of the economic impact of sport laws like those proposed by Lotka (1926), Price (1963), Pritchard (1969), Garfield (1972) and Moravcsik and Alvarez-Ossorio (1989). We consulted the works of God Gonzalez, Moya and Mateos-Hernandez (1997), Okubo (1997), Sánchez-Meca (2010) and Ardanuy (2012) as a reference to develop a process assessing the nature and course of a scientific area. We also consulted literature related to sports economics such as the Works of Sanchez and Castellanos (2011 and 2012) and Li and Jago (2013).

This paper is carried out bearing a broader perspective on the economic impact of sport. As such, it not only includes works that analyze sporting events, but it also includes those that study the impact of sports franchises, clubs and stadiums

The data bases, Scopus and Web of Science, are used to obtain the sample. The first is a bibliographic database of abstracts and article references from the scientific journal Elsevier. The second is a database of the *Institute for Scientific Information* (ISI) of Philadelphia, Pennsylvania. Both databases are widely accepted for conducting bibliometric studies in social sciences.

We selected the articles using terms or keywords. The advantage of using lists of search terms is that it allowed us to reach journals that are not specific to the field of study; it therefore makes the study much more comprehensive. Yet doing this is also more laborious and complex because it requires a further refinement of the sample (Corral and Cánoves, 2013). The economic impact of sport is an issue with implications in other areas. This is why the work on this subject is not only published in journals specific to sports economics. All the contrary many works are published in journals on tourism, urban studies, economics or finance.

It is noteworthy to point out the literature on the subject had previously been thoroughly studied. This prior knowledge was used to propose the search elements directed towards obtaining the registers to be systematically analyzed. A search was performed using the terms "economic", "impact" and "sport" in both databases to select the articles to be analyzed. The search was exclusively limited to articles and conducted in English since most of the articles in these databases are in this language.

"Social sciences & humanities" is selected in the Scopus search area, with excluding "Life Sciences", "Health sciences" and "Physical sciences". The

search was refined by restricting it to the categories of "social sciences, "business management and accounting" and "economics, econometrics and finance".

With respect to the database *Web of Science*, the search was refined to the categories "business economics", "sport sciences", "urban studies" and "public administration". The last two categories were included because articles on economic impact are also published in journals under this category.

The time horizon of the study covers the period 1984-2013. The analysis begins with the year 1984 which coincides with the first publications on the economic impact of sport.

Once the final sample was obtained, all the information that did not automatically come from the databases had to be reviewed and completed. Such was the case with the number of citations, number of pages or abstract.

A bibliometric study allows for the identification of the performance of scientific activity, but not all aspects of a discipline may be extracted from this type of analysis. So, the obtained records must be thoroughly reviewed after the search. In this process we collected and studied the following information for each of the articles:

- Aim: This identifies whether the paper is about a one-sport event, a multi-sport event, or a sports facility or whether it is a general analysis applied to all sports.
- Type of paper: This specifies whether it is a bibliographic or empirical review.
- Type of empirical analysis: This identifies whether the empirical work measures economic impact or if it applies any other type of quantitative analysis.
- Methodology: This identifies the tools or techniques employed in the empirical work.

The classified information is then analyzed to identify the main lines of research on the economic impact of sports as well as the most relevant studies carried out in each one of these lines of research.

2.2. Panel of Experts

After analyzing the results of the bibliometric study we thought it would be interesting to know the opinion of the researchers with the greatest number of publications and citations in each facet of the area as well as the opinion of editors of the journals with the greatest number of publications. So, we asked them to give an assessment on problematic issues concerning the study of impact, the appropriateness of the methodologies used, relevant publications and future lines of research.

The expert panel process was carried out in 4 stages. First, the experts were selected. The selection was based on the results of the bibliometric analysis, which identified the most relevant authors and journals.

Second, a questionnaire was drawn up for this group of experts. Our questionnaire consisted of seven questions, two of which were of the Likert scale type. The remaining five questions were choice questions. Prior to the specific questions, personal and professional information was requested: country, college, department, discipline, age and sex: The questions were chosen taking the content of the article into account in order to delve further into the study of the evolution of economic impact of sport events and address issues such as the scientific relevance, the use and efficiency of current methodologies or possible future developments.

The first specific question requests the experts to assess the relevance of studying the economic impact of sport as a scientific discipline. The second asks them to evaluate the appropriateness of assessment methodologies on economic impact. The third poses existing issues in impact studies and the fourth asks them to assess future lines of research. The next three questions ask them to select the three most relevant contributions, authors and journals. The last three questions also give them the chance to add lines of research, contributions, authors or journals to the ones proposed.

The results of the bibliometric analysis were then used to select future lines of research. We used an objective criterion based on the results of the searches in Scopus and Web of Science to select contributions, authors and journals.

The authors were chosen on the basis of having two or more published articles, regardless of their signatory position, within the Scopus and Web of Science search. The journals proposed were those that offered two or more publications within the sample related to the economic impact of sports.

It merits commenting that a very limited number of articles were published from 1984 (year when the first article was published) to 1990. Thus 1990 – 2013 was the reference period from which only the articles with at least three references per year were selected.

Next the questionnaire (designed to be answered online) was sent to the group of experts. We contacted each of the authors and publishers through a personalized email explaining the purpose of the study and inviting them to participate. This process took a month to complete throughout the course of which three reminders were sent out to them. After obtaining the answers, we proceeded to the analysis and the corresponding conclusions.

3. RESULTS

This section explains the results. The bibliometric analysis first presents the different indicators used and then summarizes the lines of research developed

over the period 1984-2013 in a table. Finally it explains the main results obtained from the questionnaires given to the experts on the panel.

3.1. Bibliometric analysis

The search rendered 118 articles in Scopus and 66 in the Web of Science out of which 32 articles were matching publications. These registers were then rigorously examined to make sure all of the publications were, in fact, related to the issue of the economic impact of sports. As a result of this, 34 articles were discarded. The resulting database finally consisted in 118 records and a total of 1,807 pages.

In a first step, we studied the scientific production that analyzed the evolution of the number of publications and their growth. Subsequently, we studied the productivity of the authors to identify the distribution of the publications among the authors and the evolution of co authorship and then we classified the authors according to their h index. Then we identified the journals with the greatest number of publications and their impact factor. Finally, we performed an analysis of all the citations in the publications on the economic impact of sports.

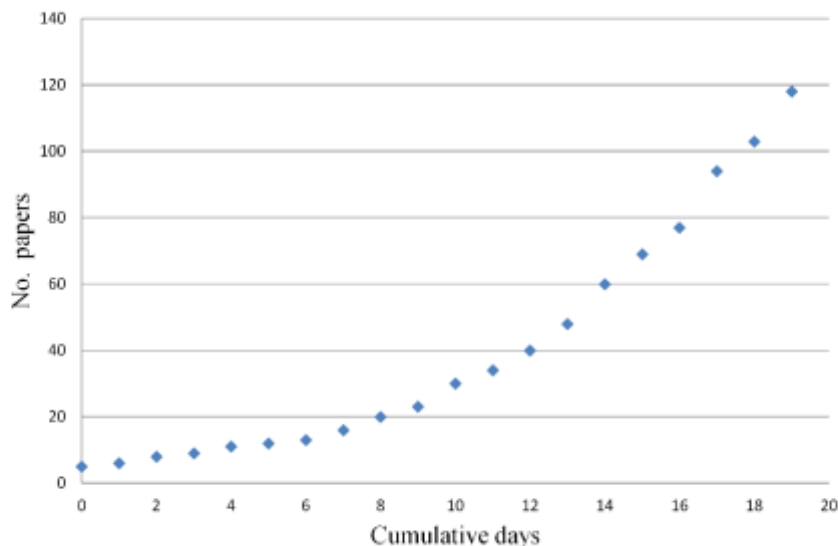
3.1.1. Scientific Production

Analyzing scientific production in a branch or line of research requires identifying the evolution of the number of publications and pages produced. Indeed, though, we must also take heed of exponential growth, a basic phenomenon in the production of publications which must not be overlooked.

The Law of Exponential Growth of Science developed by Price (1956) explains that science (in its early stages) grows and multiplies by a given number of equal time periods; i.e., it grows exponentially. The Law of Price led to the determination of indicators for annual growth and duplicity in published work (Ardanuy, 2012).

The study of the economic impact of sport is still in its early stages of development. As such, publications in this field are growing at an annual exponential growth rate of 18% and a 4-year duplicity rate.

Figure 1. Growth of the topics on the Economic impact of sports for the period 1984-2013



Research on the economic impact of sport has significantly grown since the year 2000. This growth is coincidental with the booming growth of Sports economics (the branch of the science to which it belongs) over the course of the first decade of this century (Sanchez and Castellanos, 2011). The last six years of analysis (2008-2013) accumulates 60% of its scientific production. The most productive years are 2008, 2011 and 2013.

As for publications by country, 43% are by authors from US universities, followed by authors from the UK (15%) and South Africa (7%). Spain is in fourth place, with a share of 6%, followed by Germany and Canada with 5%, respectively. Countries with four or fewer publications represent 15%.

3.1.2. Author productivity

Lotka's Law explains the distribution of authors according to their productivity by expressing a situation in which few authors publish the most jobs (Lotka, 1926). This same thing happens with the field of our concerns. Authors with one publication represent 84% of the total. Authors with two or publications represent 14% and authors with over five publications represent less than 2%. Thus, 1.25 is the average number publications per author.

Co-authorship, especially among researchers of different nationalities and universities, strengthens the working groups and increases scientific communication. Almost 75% of the published work on the economic is carried

out between two or more authors and 17% of this corresponds to work performed among authors from universities in different countries (see Table 1).

An analysis by periods shows that the number of co-authorships increases as the research on the economic impact of sport progresses.

Over the period 1984-2000 almost 54% of the publications were authored by one individual. This proportion of individual authorship dropped to 34% between 2001 and 2007 and individual registers were under 16% (see table 2) for the period 2008-2013 (the most productive in this area).

Table 1. Analysis of Co authorships

Nº authors	Nº publications	%	Nº pages	%
1	30	25.4%	488	27.0%
2	50	42.4%	718	39.7%
3	23	19.5%	357	19.8%
4	12	10.8%	197	10.9%
5	1	0.9%	16	0.9%
7	2	1.7%	31	1.7%

Table 2. Analysis of co authorships for periods of time.

Period	Nº authors	Nº publications	%
1984-2000	1	7	53.9%
	2	4	30.7%
	3	1	7.7%
	4	1	7.7%
2001-2007	1	12	34.3%
	2	15	42.9%
	3	4	11.4%
	4	4	11.4%
2008-2013	1	11	15.7%
	2	31	44.3%
	3	18	25.7%
	4	7	10.0%
	5	1	1.4%
	7	2	2.9%

The h index determines the authors belonging to the sample whose publications have generated the greatest impact. Out of all the authors analyzed (211 authors), 32 have an h index equal to or greater than 10, which means that 10 of their publications have at least 10 citations each.

3.1.3. Impact of the sources

The impact factor (IF) is the most widespread and commonly accepted indicator utilized to assess the impact of journals and their relative importance within a scientific field. The IF is defined as the relation between the citations received - in a given year- for work published in one journal during the previous two years and the total number of articles published in it over those past two years (Sancho, 1990). Thomson ISI analyzes journals and annually publishes the Journal Citations Reports (JCR) which presents the list of journals included in the database and classified according to their impact factor.

In addition to the impact factor, the JCR also provides, among other data, the total citations –total number of journal references in JCR in a year– and the immediacy index. The latter, less important than the impact factor, represents the measure of how quickly articles are cited in a particular journal (Sancho, 1990).

The registers selected for the database used in this work were published in 68 journals, of which 56% are indexed in Web of Science (Thomson ISI). The remaining 44% are indexed in Scopus. Table 3 shows the journals that accumulate the greatest number of publications on the economic impact of sport. Among them, we may observe journals specific to the area such as *Journal of Sport Economics*, *International Journal of Sport Finance* and *Journal of Sport Management* as well as journals in the field of tourism (motivated by the relationship between sporting events and the attraction of visitors). There are also publications in journals on urban studies and public administration. This is so as far as the impact analyses explain the influence exerted on urban development, public policies in the area of sport, participation in employment, GDP and taxes.

The appearance of journals specializing in the economics of sport, such as the *Journal of Sport Economics* and *International Journal of Sport Finance*, is indicative of the growth of this field of study and undoubtedly provides an incentive for researchers (Sanchez and Castellanos, 2011).

The magazines with the greatest number of publications on the economic impact of sport, are those related to the discipline of tourism (*Journal of Travel Research*, *Tourism Management* or *Annals of Tourism Research*), which also boast that they have the highest impact factor and the greatest number of citations (assessment made from JCR 2013). Journals specific to sports economics such as the *Journal of Sport Economics* or the *Journal of Sport Management* present lower values both in terms of the impact factor as well as the number of citations.

Table 3. Magazines with the greatest number of publications on the economic impact of sports

Name of the Journal	Impact Factor	Immediacy Factor	Total citations
Annals of Tourism Research	2.795	0.320	4,480
Tourism Management	2.377	0.370	5,352
Journal of Travel Research	1.884	0.220	2,577
Journal of Urban Affairs	1.298	0.167	673
Journal of Sport Management	0.727	0.029	504
Tourism Economics	0.573	0.023	593
Journal of Sports Economics	0.544	0.100	421
Economic Development Quarterly	0.510	0.107	438
Development Southern Africa	0.407	0.096	338
International Journal of Sport Finance	0.179	0.067	61

3.1.4. Studying citations

Measuring the impact of the work according to the citations they have received has become an essential part of scientific activity. This indicator is the most widely used but it is also the most controversial one (González de Dios et al., 1997). In the case of social sciences there is divergence concerning the choice of a given database as a reference to register citations and its importance in assessing research. Although the number of citations cannot be directly associated to the quality of a research paper, the analysis may provide some useful insight on how much a particular piece of research has influenced subsequent work (Sanchez and Castellanos, 2011).

In the case of the economic impact of sport, just over 21% of the publications have no citation (resulting from the search in Scopus and Web of Science); nearly 47% of the publications have between 1 and 10 citations; 15 have between 11 and 20 citations and 14% have between 20 and 60 citations. Only three publications have over 60 citations (namely 104, 107 and 184 citations each).

Table 4. Number of citations in publications on the economic impact of sports.

Number of citations	Number of articles	%	Average no. of citations
0 citations	25	21.2%	0

Between 1 and 10 citations	55	46.6%	4
Between 11 and 20 citations	18	15.3%	14
Between 20 and 60 citations	17	14.4%	39
Over 60 citations	3	2.5%	132

We have established three periods from which to select the most cited articles in the sample (1984-2000, 2001-2007, and 2008-2013) and selected the publications with the highest average number of annual citations, over 2, for each of them within the corresponding period. Table 5 shows the result: 52% of the 27 publications selected correspond to the period 2008-2013 and 41% correspond to 2001-2007. This indicates it is an area under development in the field of research.

Table 5. Number and average number of citations per year of the most cited articles in the sample

Article	No. of citations	Average no. of citations per year
Lee y Taylor (2005)	104	11.5
Collins, Jones y Munday (2009)	44	8.8
Ritchie (1984)	186	6.2
Atkinson, Mourato, Szymanski y Ozdemiroglu (2008)	36	6.0
Baade y Matheson (2004)	59	5.9
Kavetsos y Szymanski (2010)	23	5.7
Crompton (1995)	107	5.6
Collins, Flynn, Munday y Roberts (2007)	38	5.4
Fourie y Santana-Gallego (2011)	15	5.0
Gelan (2003)	54	4.9
Baade, Baumann y Matheson (2008)	29	4.8
Coates y Humphreys (2003)	52	4.7
Crompton (2004)	44	4.4
Hagn and Maennig (2008)	25	4.2
Daniels, Norman and Henry (2004)	40	4.0
Li, Blake and Thomas (2013)	4	4.0
Whitson (2004)	37	3.7
Ashton, Gerrard and Hudson (2003)	34	3.1
Matheson (2009)	15	3.0
Bob and Swart (2009)	13	2.6

Fairley, Tyler, Kellett and D'Elia (2011)	7	2.3
Madden (2002)	28	2.3
Baumann, Matheson and Muroi (2009)	11	2.2
Santo (2005)	19	2.1
Dolles and Soderman (2008)	12	2.0
Hritz and Ross (2010)	8	2.0
Barquet, Brida, Osti and Schubert (2011)	6	2.0

3.1. Evolution of the economic impact of sport over the period 1984-2013

Most of the articles of the database analyze events in a specific sport (53%). Among these events, 42% correspond to soccer (mainly the World Cup), 14% correspond to Athletics and 11% correspond to car racing (mostly Formula 1 and the World Rally Championship). Some of the other sports reflected in the rest of the articles are: basketball, baseball, softball, football, tennis, cycling, hockey and golf.

On the one hand, 22% of the articles present a generic analysis. Most of them review the literature and discuss the situation or a specific aspect of the economic impact of the events based on previous work without performing an empirical analysis. On the other hand, 14% of the work focuses on analyzing multi-sport events, especially the Summer Olympics. Finally, 11% aims to study a specific aspect of the economic impact pertaining to the facilities, stadiums or sports franchises.

Concerning the type of publication, 24% of the work presents theoretical research, including the construction of theories and the development of the conceptual aspect as well as the review of the literature on the topic. Empirical analysis is performed in 76% of the work, out of which 20% aims to quantify the economic impact -through impact methodology - and 80% performs other related economic impact analysis, mostly focusing on the impact of a particular variable.

The most widely used economic impact methodologies are Input-Output analysis and CGE model. Cost-Benefit Analysis is also used to calculate the direct impact of events. However, satellite accounts or other methods, such as macroeconomic simulation models, are used to a lesser extent in the studies.

Registers classified as "other quantitative analysis" relate to studies that mainly focus on analyzing how the event, stadium or franchise influences a specific aspect or variable of the impact like employment, GDP, personal income or taxable income, among others.

We have identified the following distinct lines research on the economic impact of sport over the period 1984-2013 with the information attained from the classification and analysis according to objective criteria, type, methodology and empirical analysis:

- A. Analysis of economic impact.
- B. Analysis of intangible aspects that generate impact.
- C. Measurement of specific economic variables.
- D. Determinants of spending in sports tourism.
- E. Analysis of perception.

Table 6 summarizes the results of the sample based on the different lines of research identified.

Table 6. Lines of research on the economic impact of sports for the period 1984-2013

Lines of work developed over the period 1984-2013	Main work
A) Analysis of the economic impact	
Application of impact tools to analyze the effect of sports events (Satellite accounts, Computable General Equilibrium, Input-Output, Cost-Profit Analysis, Contingency Assessment Method and Sectoral-Regional Analysis)	Madden (2002), Gelan (2003), Baade y Matheson (2004), Lee y Taylor (2005), Baade, Baumann y Matheson (2011), Domingues, Betarelli y Magalhães (2011), Saayman M. y Saayman A. (2012), Li, Blake y Thomas (2013), Daniels (2004) y Hodur, Bangsund, Leistriz y Kaatz (2006)
Study of the limitations present in economic impact methodologies	Rosentraub et al. (1994), Crompton, (1995 y 2004), Humphreys y Prokopowicz (2007) y Matheson (2009)
B) Analysis of intangibles	
Environmental Impact	Collins, Flynn, Munday y Roberts (2007), Jones (2008), Cairns (2009), Fairley, Tyler, Kellett y D'Elia (2011) y Collins, Munday y Roberts (2012)
Effect on social aspects (urban regeneration, feelgood or welfare)	Irani (1997), Atkison, Mourato, Szymanski y Ozdemiroglu (2008), Oldenboom (2008), Sallent, Palau y Guia (2011), Dickson, Benson y Blackman (2011) y Heere et al. (2012), Kavetsos y Szymanski (2010) y Hritz y Ross (2010)
C) Measurement of specific economic variables	
Analysis of different specific economic and financial aspects (salaries, generation of employment, personal income, taxable income, etc.) to identify the impact of an event, franchise or stadium on one or more of them.	Kavetsos y Szymanski (2008), Ashton, Gerrard y Hudson (2011), Gerlach (2011) y Smith y Krige (2010), Coates y Humphreys (2003), Lertwachara y Cochran (2007), Coates y Depken (2011), Agha (2013) y Lefebre y Roult (2013)
D) Sports tourism and spending determinants	
The effect of sporting events on tourism.	Zipp (1996), Irwin y Sandler (1998), Perna y Custodio (2008), Baumann et al. (2009), Du Plessis y Maening (2011), Fourie y Santana-Gallego (2011), Fourie, Siebrits y Spronk (2011) y Preuss (2011)
Spending determinants	Barquet, Brida, Osti y Schubert (2011), Kruger, Saayman y Ellis (2012) y Dixon, Backman S., Backman K. y Norman (2012)

E) Analysis on the perception of the impact	
Assess the perception of spectators, participants or residents on the economic impact of an event, team or sports facility.	Jenkins y Rios-Morales (2013), Martin y Barth (2013), Bozman, Kurpis y Frye (2010), Bob y Swart, (2009) y Agrusa, Lema, Kim y Botto (2009)

The most mature line of work is the application of impact methodologies to determine the effect of events, teams or sports facilities. Existing studies show a lack of agreement on the most appropriate analysis tool. Numerous works explain the limitations and the flawed use of the studies. The future development of this line of work involves adjusting economic theories and other disciplines to be able to delve further into the impact of the events, teams or sports facilities. Another aspect addressed by impact analyses is the inclusion of intangible factors (environmental, social regeneration, feelgood, welfare or entertainment value, etc.). This is a recent line that is yet to be developed given the difficulty of measuring and assessing the economic value of these factors.

Economic and financial variables (wages, employment, personal income, taxable income, etc.) are more frequently used to determine the relationship between a sporting event in the analysis of the impact of franchising, leagues and sports facilities. In general, studies show that sporting events have little influence on the variables analyzed and warn of the need to make better use of public resources.

Studies on the determinants of spending on sporting events and the perception of economic impact are the most recent lines of work. Identifying the type of attendees that spend the most on sporting events and the conditions that influence spending helps to improve economic management and efficiency in the organization of sporting events. Also identifying the residents' perception of how the team, facility or event and the type of spectators or participants influence their territory is another step forward in the development of the quest for answers to the economic reality of sport.

3.3. Panel of experts

We selected a total of 78 experts: 45 specialized researchers in the field of study and 33 editors of journals that have published works related to the economic impact of sports. These experts came from 10 different countries: United Kingdom, Belgium, US, South Africa, Germany, Denmark, Spain, Austria, South Korea and Australia.

We received 43 replies to our email to which the author or editor either indicated their reasons for responding or not responding the questionnaire. The responses from the authors yielded a total of 26 questionnaires. Most of their responses were positive and the authors expressed interest in knowing the final outcome of the survey.

Table 7. Participation of Experts

	No. of emails sent	Responses received	Questionnaires Responded
Authors	45	29	26
Editors	33	14	5
Total	78	43	31

However, most emails answered by the editors indicated that they were incapable of responding to the questionnaire. The main reason they gave for this was that they felt they had not had enough exposure to work on the economic impact of sport to capacitate them to respond adequately. Thus, the response rate of the editors was low.

Besides the aforementioned reason pointed out by the editors, their low response rate was also due to the fact that some of these editors were also authors. In the event of this coincidence, we addressed our email to the individual as an author rather than an editor. However, this further reduced the number of editors who could potentially answer the questionnaire.

The responses of the editors were not accounted for given. Their response rate was too low and clearly insufficient to significantly represent them. Finally, the analysis was carried out with the 26 questionnaires answered by the authors. As expected, for 85% of the experts it was relevant or extremely relevant to study of the economic impact of sports events. Cost-Benefit Analysis was the most widely accepted tool for calculating the impact followed by CGE.

As for the limitations of these types of studies, one of the most limiting aspects in analyzing impact is the misleading use that is made of the study to present very positive but unrealistic results. Most experts highlight that this along with equally limiting conceptual, statistical and methodological issues pose serious problems.

This perception of the experts about this can be clearly seen in several articles in the sample which analyze the limitations of economic impact studies, especially those conducted by private organizations out of the field of research.

In terms of future research on the economic impact of sport, experts highlight the following lines of work: the analysis of intangibles, the impact of modeling methods, and the analysis of spending patterns in sporting events. Other proposed lines are: strategies to improve the economic effects of events, the legacy of sporting events, the crowding-out effect and the retrospective analysis of the magnitude of economic indicators such as sales, taxes, income and prices.

Table 8. Assessment of the contributions proposed as compared to the number of citations and the year of publication

Articles	Assessment	Citations	Year of Publication
Baade y Matheson (2004)	37%	59	2004
Crompton (1995).	27%	107	1995
Rosentraub, Swindell, Przybylski y Mullins (1994).	27%	40	1994
Kavetsos y Szymanski (2010).	23%	23	2010
Coates y Humphreys (1999).	17%	95	1999
Porter (1999).	17%	160	1999
Baade, Baumann y Matheson (2008).	13%	6	2008
Collins, Jones y Munday (2009).	13%	44	2009
Crompton (2004).	13%	44	2004
Atkinson, Mourato, Szymanski y Ozdemiroglu (2008).	10%	36	2008
Coates y Humphreys (2003).	10%	52	2001
Fourie y Santana-Gallego (2011).	10%	15	2011
Hagn y Maennig (2008).	10%	25	2008
Daniels, Norman y Henry (2004).	7%	40	2004
Gelan (2003).	7%	54	2003
Ashton, Gerrard y Hudson (2003).	3%	34	2003
Baade y Dye (1990).	3%	27	1990
Collins, Flynn, Munday y Roberts (2007).	3%	38	2007
Lee y Taylor (2005).	3%	104	2005
Whitson (2004).	3%	37	2004

Table 8 compares the assessment made by the experts, the number of citations and the year of publication of the proposed contributions. No direct relationship was observed among the three indicators. The most cited contributions were not precisely the ones with the highest ratings from the consulted experts. Moreover, the oldest items were not the most cited ones. In general, theoretical work and literature reviews have a greater number of citations. However empirical studies are more valued, in practice, given their difficulty and their innovative contributions to science.

The type of contribution and the aim of the articles highlighted by the experts are diverse. The works of Baade and Matheson (2004) as well as of Rosentraub et al. (1994) address the study of the economic impact of a specific event. Crompton (1995) performed a theoretical analysis that explains, through real examples of impact analysis, the various errors made in the application of methodologies. Kavetsos and Szymanski (2010) discuss an intangible aspect of the economic impact of the event, called "feelgood" and Coates and Humphreys (1999) analyze the effect of sports franchises on employment and income in certain economic sectors.

Experts consider the most suitable journals for publishing contributions on the economic impact of sport are those in the economic area of sport like: *Journal of Sports Economics*, *International Journal of Sport Finance*, *Journal of Sport and Tourism* or *Journal of Sport Management*. They also highlight journals related to urban and regional studies like *Regional Studies*, *Urban Studies* and *Journal of Urban Affairs*. Tourism is an area of study closely related to the economic impact of sports. However, these related journals are not rated as the best for publishing contributions on impact.

The consulted authors added three journals to the proposed list: *European Sport Management Quarterly*, *International Journal of Event and Festival Management* and *Managing Leisure: An International Journal*. The first two journals are identified in the sample, but are not included in the questionnaire list because this list only includes publications with two or more publications.

Table 9. Journal Assessment

Journals	Impact Factor	Assessment
Journal of Sports Economics	0.544	57%
Regional Studies	1.756	30%
International Journal of Sport Finance	0.179	27%
Journal of Sport and Tourism	-	27%
Journal of Sport Management	0.727	23%
Urban Studies	1.330	23%
Journal of Urban Affairs	1.298	20%
Tourism Economics	0.573	17%
Tourism Management	2.377	17%
Annals of Tourism Research	2.795	13%
Journal of Travel Research	1.884	13%
Sport Management Review	-	10%
Economic Development Quarterly	0.510	3%
Event Management	-	3%
Sport in Society	-	3%
Third World Quarterly	0.704	3%
Current Issues in Tourism	0.958	0%

International Journal of Sport Management and Marketing	-	0%
Journal of Convention and Event Tourism	-	0%
Journal of Sport and Social Issues	-	0%
Labor Economics	0.874	0%

4. CONCLUSIONS

The economic impact of sport is in its early stages of development and, as may be seen in this bibliometric study, it is evolving exponentially. It started to grow at its highest rate in the year 2000 and accumulated the greatest level of scientific production over the course of the last six years of this analysis (2008-2013).

Lines of research in the economic impact of sport developed over the period 1984-2013 were comprised of: economic impact analysis, analysis of intangibles, the measurement of specific economic variables, sports tourism, and determinants of spending and perception analysis. The work carried out has evolved from a generic point of view to a more specific one. In the beginning, it centered on the application of impact methodologies to determine the full impact of events as well as the influence of events on certain economic and financial figures. At present, even though impact assessment is still in force, other aspects are also included, e.g. individual spending and the perception of sport tourists and the aspects that influence their spending.

The economic impact of sport has evolved not only in sports economics, but also in other areas such as tourism, urban studies, public administration or management in sports. Future lines of scientific research may continue evolving in the following directions:

- Analysis of the intangible aspects: The economic impact of sport is not a sufficient aim in itself to justify certain investments. This is why we must measure and identify its influence on the organization of events, the existence of facilities or teams within a territory as well as how it affects inhabitants in a society and the environment. Although steps have been taken in this direction, we must improve the tools and analysis used to carry out this analysis.
- Modeling methods of economic impact: There is no consensus regarding the ideal tool for studying the economic impact of sport. Work must be carried out to model and adapt existing economic and financial tools to improve the estimates in the analysis of events, franchises and sports facilities.
- Analysis of determinants of spending: Research on the economic impact of sport has focused on macro-level studies providing the (direct, indirect and induced) total economic impact of an event. Thus, the study of spending patterns represents a micro-level analysis approach that

identifies the variables with the greatest impact on spending. It therefore contributes important information to decision-making about events and sports facilities.

- Economic impact of sporting events of medium size: Although research has traditionally focused on Mega-events, studies are now ever-increasingly focusing their interest on smaller events. Such events do not generate large amounts of money but they do represent major potential for territorial economy and development if they are organized efficiently.

Having a panel of experts has allowed us to corroborate the results of bibliometric and systematic analysis of the sample. Future research lines proposed in the questionnaire have been echoed by the experts, who have additionally recommended: strategies to improve the economic effects of events, legacy of sporting events, crowding-out effect and retrospective analysis of economic metrics like sales taxes, income and prices.

Another important aspect extracted from bibliometric analysis is corroborated by consulted experts, the existence of limitations in estimating economic impact. The resolution and improvement of these limitations is an aspect that cannot be neglected in future work. Doing so would imply unifying the conceptual aspect as well as improving statistics and methodologies. Moreover it would lead to the responsible use of impact studies, thereby preventing the misleading use of search results to procure public and private support for the events.

Finally, it is worth noting the economic impact of sports has a clear practical application in addition to its scientific aspect. It can improve the management of sporting events and facilities through the adequate use of public resources to make the events profitable for the population from an economic and social point of view.

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