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Darko Dimitrovski
University of Kragujevac
Faculty of Hotel Management and Tourism
Vrnjačka Banja

Miljan Leković
University of Kragujevac
Faculty of Hotel Management and Tourism
Vrnjačka Banja

Marijana Đurađević
University of Kragujevac
Faculty of Hotel Management and Tourism
Vrnjačka Banja

ECONOMIC IMPACT OF THE SPORTING EVENTS AS TOURISM NICHE PRODUCT: A CONTEMPORARY BIBLIOMETRIC ANALYSIS

Ekonomski uticaj sportskih događaja kao nišni turistički proizvod – savremena bibliometrijska analiza

Abstract

The paper provides contemporary insight into the issue of the economic impact of sporting events to contribute to the ongoing discussion related to the topic and to provide an interdisciplinary understanding beyond sports management literature. This was achieved by implementing the evaluative bibliometric analysis of papers on the economic impact of sporting events published in tourism journals indexed in the Web of Science in the period 2000-2018 years. In addition to the application of evaluative bibliometric analysis, the research includes a comprehensive annotated review of existing literature on the topic, based on the bibliography that corresponds to the research's predefined requirements. The results of the research confirm Bradford's bibliometric law, while the applicability of Price's bibliometric law was denied. In the context of the event type, findings point out that mega-events, such as the Olympics and the FIFA World Cup, are prevalent themes within this tourism specialization. Finally, Tourism Economics achieved the largest production of papers on the researched topic, however, Tourism Management was found to be most influential tourism journal, along with the most influential paper within this specialism published in the same journal in 2005, by Choong-Ki Lee and Tracy Taylor.

Keywords: *economic impact, sporting events, bibliometric analysis, tourism journals, Web of Science.*

Sažetak

Rad pruža savremeni uvid u problematiku ekonomskog uticaja sportskih događaja u nameri da doprinese aktuelnoj diskusiji na ovu temu i obezbedi njeno interdisciplinarno razumevanje izvan okvira literature posvećene menadžmentu u sportu. Navedeno je postignuto primenom evaluativne bibliometrijske analize radova na temu ekonomskog uticaja sportskih događaja objavljenih u časopisima iz oblasti turizma indeksiranim u Web of Science u periodu 2000-2018. godina. Pored primene evaluativne bibliometrijske analize, istraživanje uključuje sveobuhvatan i detaljan pregled postojeće literature, zasnovan na bibliografiji koja ispunjava unapred definisane kriterijume. Rezultati istraživanja potvrđuju validnost Bradford-ovog bibliometrijskog zakona, dok je primenjivost Price-ovog bibliometrijskog zakona odbačena. U kontekstu tipa događaja, rezultati istraživanja ukazuju da su mega događaji, poput Olimpijskih igara i Svetskog prvenstva u fudbalu, dominantne teme u okviru ove turističke niše. Konačno, iako je Tourism Economics časopis sa najvećim brojem objavljenih radova na istraživanu temu, utvrđeno je da je Tourism Management najuticajniji časopis iz oblasti turizma u kome je 2005. godine objavljen i najuticajniji rad iz ove niše autora Choong-Ki Lee i Tracy Taylor.

Ključne reči: *ekonomski uticaj, sportski događaji, bibliometrijska analiza, turistički časopisi, Web of Science.*

Introduction

Inclusion of events in a destination portfolio can diversify a tourism product mix of a host destination [58]. Sport events were perceived as valuable instruments in destination marketing efforts [50]. Ziakas [58] emphasize the urge of "creating synergies between sport events and the destination for joint marketing initiatives, cross-promotion, bundling of tourist services and co-branding" [p. 2]. The correlation between sport and event tourism has been acknowledged on the level of 'Sport Tourism Cube' distinguishing the axes related to event, type of physical involvement and sport engagement [53]. Unfortunately, there is only limited number of the studies that investigate how these events contribute economically to destination tourism product.

The growth in the number of sporting events worldwide could be described as remarkable [52], so there is an objective need to evaluate their economic impact. An increasing number of sporting events can be viewed as a result of the annual programs of supporting organization of sport events proposed and run by many cities and countries [30]. Sporting events are a vital source of revenue for cities, regions and host countries [39], confirming their role as a powerful tool for stimulating economic activity [20]. In addition, other advantages of hosting sporting events have been recognised such as improvements to existing and the construction of new sports facilities, contribution to sports and the enhancement of the host country's image [15].

Identifying and measuring the possible economic impact of sporting events is a complex task [12]. The economic impact of sporting events could be defined as "net economic changes in the host community, excluding non-market values stemming from the expenditure attributable to the event" [14, p. 33]. There are three elements of economic impact that can be estimated as a result of an event [32; 56]: direct revenue or costs; indirect effects or expenses of participants or visitors; and induced effects that are directly stimulated by the event. Since the duration of sporting events can range from one day, over several days to several weeks [55], it is necessary to adapt monitoring methods to more accurately gauge their economic impact [56]. Methods for assessing the economic impact of sporting events range from simple estimates of the total consumption of visitors to sophisticated modelling techniques that explore changes in the supply side [12].

The economic impact of sporting events is a common theme within tourism literature. Thus, to fully understand its place and evolution, it is necessary to give a comprehensive overview of the situation in the field of research and conduct a quantitative analysis of published papers. Evaluative bibliometric analysis was found to be an appropriate tool for performing the quantitative analysis and acknowledging the patterns and structures within tourism academia [11].

Aims and research design

The aims of the paper are, first, to understand the ongoing discussion related to the economic impact of sporting events by implementing a comprehensive review of the literature beyond sport management literature, secondly, to identify most influential specialism topics, authors, papers and journals, modelling scientific thought within the researched field, and thirdly, to provide an interdisciplinary understanding of the issues studied. A further understanding of the economic impact of sporting events was found as a precondition for their successful management and valorisation in the future. Therefore, the study is valuable in both theoretical and practical terms. The originality of the paper lies in the fact that, according to the authors' knowledge, no similar study exists in the context of tourism academia which is driven by the bibliometric approach in such a narrow niche as sporting events and their economic impact.

The research was designed in a two-fold manner. The first part provides insight into the search results of papers that meet pre-defined criteria that will be explained in detail within the Methodology section. In addition to the search results, the first part of the research provides a comprehensive annotated literature review that examines the development of scientific thought within the researched tourism specialism. The second part concerns the examination of keywords within selected papers to identify the most commonly used keywords and the prevalent themes within the topic of interest. Finally,

this section includes citation analysis (papers and journal distribution of the citations) to reveal the leading papers and journals in the context of the research theme.

Methodology

In order to understand the economic impact of sport events and to fulfill the aims of the paper, the bibliometric method has been applied. Bibliometric analysis is often used in academic research, "due to its state of art contribution in making certain areas of interest known" [9, p. 108]. According to Ellegaard and Wallin [22], "bibliometric methods or analysis are now firmly established as scientific specialities and are an integral part of research evaluation methodology especially within the scientific and applied fields" [p. 1809]. Bibliometric analysis is a quantitative analysis of published papers, which is primarily characterised by objectivity, which is why it is suitable to complement subjective interpretations of the literature review in the field of research.

A prerequisite for conducting appropriate bibliometric analysis is the formation of a representative sample of papers in the study [19], which was achieved by applying the following criteria: 1) only tourism journals referred in Web of Science (WoS) were included; 2) only original and reviewed scientific papers studying the economic impact of sporting events were chosen; 3) following the example of Benckendorff [7, p. 108], edited editorials, letters, notes and errata were excluded; 4) the research covered only papers published since 2000 to achieve contemporary insight into the investigated phenomenon; 5) all selected papers were studied in detail, which resulted in an additional reduction of the sample due to the elimination of those papers whose focus is not on the economic effects of sporting events (for example, papers investigating the respondents' perception of potential economic effects). The implementation of these filters resulted in the creation of a final sample of 37 papers which, to monitor changes and trends in a particular research niche, are divided into two periods of approximately equal duration (2000-2009 and 2010-2018).

The analysis of keywords and citation analysis stand out within the evaluative bibliometric analysis. Keyword analysis points to issues that predominantly capture the attention of researchers and represent the prevalence of themes within the topic of interest. In order to obtain a clear picture of the key subjects (topics) within this tourism niche, the distribution and occurrence of the keywords within the sample was visualised in the form of a word cloud. Also, the longitudinal change in the keyword occurrence was monitored by separating the occurrence of the keywords in the two above-mentioned time frames. Citation analysis aims to assess the scientific impact of individual authors, published papers and scientific journals on the previous and future development of the research area. According to Acedo et al. [1], "citation frequencies are assumed to indicate the scientific utility of any paper, and this can be used in turn as a partial indicator of the study quality" [p. 965]. Publish or Perish 6.45 software package was used to conduct an evaluative bibliometric analysis of the citations (Google Scholar, Scopus and Crossref), field-weighted citation and cites / per year. This software package was considered suitable, as it has already been used and recommended in the context of bibliometric analysis in tourism [27; 54].

Moreover, the examined research niche has been additionally depicted through paper distribution among tourism journals. The initial assumption related to the paper distribution across journals follows Bradford's bibliometric law which postulates that most of the articles were centred in core journals, while the number of other articles was reduced to more peripheral journals [49] and Price's bibliometric law that acknowledges that study scientific production could be perceived as exponential [11].

Results and discussion

Results of search and comprehensive overview of the niche

The search resulted in the selection of eighteen papers published between 2000 and 2009 and nineteen studies published between 2010 and 2018 in tourism and hospitality related journals indexed in the WoS Master Journal list. These studies are shown in Tables 1 and 2. Moreover, to provide a detailed examination of the academic thought

related to the topic, an extensive literature review over two pre-defined timeframes was conducted.

Within the first period, Madden [45] assesses the economic impact of the Sydney 2000 Olympics using the Computable General Equilibrium (CGE) model following the MONASH Multiregional Forecasting (MMRF) model. The MMRF recognises the changing economies of the eight regions associated with the interstate movement of commodities and factors of production (especially labour). The Commonwealth Games, which are the subject of research by Lockstone and Baum [44] and took place in 2006 in Melbourne, Australia, resulted in a high level of gross consumption of visitors from both overseas and interstate and metropolitan visitors to Melbourne. The economic and social impact of another mega-event, the 1999 Rugby World Cup (RWC99) in Wales, have been evaluated as very significant in the work of Jones [33]. Kasimati [35] explains that the Summer Olympic Games has a huge role in promoting and developing the country in which it is held, by contributing to economic growth, tourism development and additional employment. This paper emphasises the positive impact that continues long after the event has taken place. Li and Blake [40] engaged in research into the economic impact of the 2008 Beijing Olympic Games using Olympic-related investment and expenditure assessment. This expanded Olympics-related framework shows the flow of investment and expenditure in the city as well as the host country. Lee and Taylor [39] examined the FIFA World Cup 2002 in South Korea, using an Input-Output (I-O) model and concluded that visitor spending generated economic benefits to the tune of $307 million in revenue and the creation of 31,349 full-time equivalent jobs.

Daniels [16; 17] studied the economic impact of the National Softball Association's B-league Girls Fast-pitch World Series (GFWS) as a medium-size event using I-O analysis and Occupation-based (O-B) modelling. In the first study [16] this event led to the emergence of new jobs, with wages estimated at a medium level. The second study [17] estimated the economic impact of the event between two different regions: Mecklenburg County (North Carolina) and York County (South Carolina). Although most of the tournaments were played in York, the results showed that the economic impact on Mecklenburg was almost double the level. The South Pacific Masters' Games, as a medium-sized event, was the subject of research by Ryan and Lockyer [51]. Expenditure on accommodation, food, drink, souvenirs, transport and more was calculated and total expenditure was estimated. A distinction was made between three groups of expenditure: "retained expenditures"; "partial additional consumption"; and "wholly incremental expenditures". Cannon and Ford [10] also engaged in researching medium-sized events, more specifically the consumption of visitors to the 1995 and 1999 Bowl college football games in Alamo. The estimation was made using the Ordinary Least Squares (OLS) model in both cases, examining daily visitor consumption estimates and changes in consumption results over time. The positive impact on expenditure was from out-of-state visitors with higher income levels.

Hodur et al. [29] assessed the economic impact of events held at FARGODOME, including eleven different event types. The economic impact assessment was performed using the I-O model, where the results obtained reflect changes in the overall production of each event type and should be interpreted accordingly. Jones [34] studied the 2004 World Rally Championship held in Wales, in the United Kingdom. Spectators were interviewed about expenditure by category, to gain a more accurate assessment of the impact of the event, using environmental accounting techniques. This method of assessment may provide indications of the "ecological economic efficiency" of the host country of the main events. Connell and Page [13] investigated the economic impact of the World Medical and Health Games (WMHG) that have traditionally consisted of 22-24 events since 1978. Using a business survey technique, it was estimated that businesses located in the inner-city, downtown area had a disproportionate benefit from the event compared with those in other locations. Breen et al. [8] studied the 1995 Schweppes Northern Conference University Games (NCUSA) using recall and diary questionnaire techniques for economic impact examination. This research confirmed that the use of recall interview techniques can result in a lower estimate of visitor costs. The event chosen in Daniels et al. [18] analysis was the Cooper River Bridge

Run (CRBR) organised in Charleston, South Carolina, USA. The aggregated O-B model, which uses full-time equivalent wage data, is recognised as the most accurate economic assessment model for application to sporting events. Gelan [24] used to recall and diary questionnaire techniques to measure the economic impact of the 1999 British Open held at Carnoustie, Scotland. Most visitor spending occurred within the venue, suggesting that the development of local businesses that offer visitors products and services at the event should be encouraged. Agrusa et al. [2] looked at the impact of tourism on the local economy, most notably the 2007 Honolulu Marathon event. The authors emphasise the use of the Nordic Model as significant for measuring the impact of regional events.

Dwyer et al. [20] studied the projected impact of sporting events on production, gross output and employment. The findings suggest different economic impacts of the sporting events depending on the estimation technique. The authors highlight the benefits of CGE analysis in assessing the economic impact of special events, especially when considering broader rather than local impact.

To summarise, approximately half of the papers published between 2000 and 2009 in selected tourism journals indexed in the WoS examined the economic impact of mega and major events, while the remainder investigated the economic impact of medium-sized and small-scale events. Sporting events organised in the United States, Australia, New Zealand and the United Kingdom were most common in the sample. In terms of the research methods applied, I-O analysis was dominant, while other methods of research were approximately equally represented.

Within the second examined period, Li et al. [43] applied the CGE analysis model, a model developed as a country-specific statistic to assess short-term impact, to the 2008 Beijing Olympic Games. The results were positive, but compared to previous Olympics, several factors caused a fall in international tourist arrivals and expenditure, where the most important factor was the tightening of visa requirements. Giampiccoli et al. [25] used a multiple-aspect approach and comparative analysis to compare the impact of the 2010 FIFA World Cup in South Africa with

Table 1: The structure and characteristics of the selected literature (2000-2009)

Author(s)	Title	Journal	Event	Type of event	Region	Method(s)
Daniels M. J. (2004)	"Beyond input-output analysis: Using occupation-based modelling to estimate wages generated by a sport tourism event"	*Journal of Travel Research*	NSA B-league 2001 (GFWS)	Medium-sized event	U.S.	Input-Output analysis; Occupation-based modelling
Dwyer, L., Forsyth, P., & Spurr, R. (2006)	"Assessing the economic impacts of events: A computable general equilibrium approach"	*Journal of Travel Research*	No specific event	Special events	No specific region	Computable General Equilibrium (CGE) analysis
Madden, J. R. (2002)	"The economic consequences of the Sydney Olympics: The CREA/ Arthur Andersen study"	*Current Issues in Tourism*	2000 Sydney Olympics	Mega-event	Australia	CGE model: MONASH Multiregional Forecasting (MMRF) model
Lockstone, L., & Baum, T. (2008)	"Fun in the family: Tourism and the Commonwealth Games"	*International Journal of Tourism Research*	2006 Commonwealth Games	Mega-events	Australia	No specific method
Jones, C. (2001)	"Mega-events and host region impacts: Determining the true worth of the 1999 Rugby World Cup"	*International Journal of Tourism Research*	1999 Rugby World Cup	Mega-event	UK, Ireland and France	No specific method
Kasimati, E. (2003)	"Economic aspects and the Summer Olympics: A review of related research"	*International Journal of Tourism Research*	Summer Olympics	Mega-event	/	No specific method
Li, S., & Blake, A. (2009)	"Estimating Olympic-related investment and expenditure"	*International Journal of Tourism Research*	Beijing 2008 Olympic Games	Mega-event	China	Olympic-related investment and expenditures assessment

Author(s)	Title	Journal	Event	Type of event	Region	Method(s)
Ryan, C., & Lockyer, T. (2001)	"An economic impact case study: The South Pacific Masters' Games"	*Tourism Economics*	South Pacific Masters' Games	Medium-sized event	New Zealand	Case study
Cannon, T. F., & Ford, J. (2002)	"Relationship of demographic and trip characteristics to visitor spending: An analysis of sports travel visitors across time"	*Tourism Economics*	Alamo Bowl college football games	Medium-sized event	U.S.	Ordinary least squares (OLS)
Hodur, N. M., Bangsund, D. A., Leistritz, F. L., & Kaatz, J. (2006)	"Estimating the contribution of a multipurpose event facility to the area economy"	*Tourism Economics*	Eleven FARGODOME Events	Small-scale event	U.S.	Input-Output model
Jones, C. (2008)	"Assessing the impact of a major sporting event: The role of environmental accounting"	*Tourism Economics*	2004 World Rally Championship	Major event	U.K.	Environmental accounting techniques
Connell, J., & Page, S. J. (2005)	"Evaluating the economic and spatial effects of an event: The case of the World Medical and Health Games"	*Tourism Geographies*	World Medical and Health Games	Medium-sized event	Scotland, U.K.	Business survey technique
Breen, H., Bull, A., & Walo, M. (2001)	"A comparison of survey methods to estimate visitor expenditure at a local event"	*Tourism Management*	1995 Schweppes Northern Conference University Games	Local event	Australia	Recall and diary questionnaire techniques
Lee, C.-K., & Taylor, T. (2005)	"Critical reflections on the economic impact assessment of a mega-event: The case of 2002 FIFA World Cup"	*Tourism Management*	2002 FIFA World Cup	Mega-event	South Korea	Input-Output model
Daniels, M. J. (2007)	"Central place theory and sport tourism impacts"	*Annals of Tourism Research*	NSA B-league 2001 (GFWS)	Medium-sized event	U.S.	Input-Output model
Daniels, M. J., Norman, W. C., &Henry, M. S. (2004)	"Estimating income effects of a sport tourism event"	*Annals of Tourism Research*	Cooper River Bridge Run (CRBR)	Medium-sized event	U.S.	Occupation based modelling
Gelan, A. (2003)	"Local economic impacts: The British Open"	*Annals of Tourism Research*	1999 British Open	Hallmark event	U.K.	Recall and diary questionnaire techniques
Agrusa, J., Lema, J. D., Kim, S. S., & Botto, T. (2009)	"The impact of consumer behaviour and service perceptions of a major sport tourism event"	*Asia Pacific Journal of Tourism Research*	2007 Honolulu Marathon	Major event	U.S.	Nordic model

Source: Authors

the three provincial sporting events (SPE) of the Comrades Marathon, Dusi Canue Marathon and Midmar Mile held in the KvaZulu-Natal, in Durban. They concluded that SPEs could be more cost-effective, sustainable and have a stronger long-term economic impact. Meurer and Lins [46] used the Natural Logarithms of Receipts and Real Exchange Rates series for the estimation of the impact of two major events in Brazil – the 2014 FIFA World Cup and the 2016 Olympics. The research findings suggest that the economic effects were large but short-lived and that higher revenues were generated by the former event rather than the latter. Mega-sporting events such as the Summer and Winter Olympic Games, the FIFA World Cup, the Cricket World Cup, the Rugby World Cup, and the Lions Tour (which is held in 15 countries), significantly influence the promotion of the host destination and contribute to tourism development. However, according to Fourie and Santana-Gallego [23], the impact varies depending on whether they were held in- or off-season. By use of the Gravity Equation Model (GEM), the authors estimated that

four of the six mega-events had a statistically significant positive impact on tourist arrivals, although this was not the case for the Rugby World Cup and the Winter Olympic Games. Allan et al. [3] implemented the CGE model within the Glasgow 2014 Commonwealth Games intending to estimate temporary tourism expenditure. Foreign tourist expenditure was estimated at £100 million, which had a cumulative effect on employment and GDP. Nishio [47] examines the impact of eight mega sporting events on inbound tourism to New Zealand using an AR (1) model to monitor overall tourism arrivals and arrivals from the participating countries during the period 1983–2005. It was concluded that mega sporting events had a significant impact on international tourist arrivals for one event (the 1990 Commonwealth Games) and there was a significant impact from four events on visitor arrivals from participating countries. The economic impact of hosting a Formula One Grand Prix (F1) event in Shanghai, China was examined using I-O analysis by Kim et al. [36]. The results of the research, showed the great economic contribution of a sporting event, not only on sports but also on the transportation, accommodation and manufacturing industries, as well as through indirect tax, which was found as a significant item in the income of a country. Collins et al. [12] examined the impact of the 2007 Tour de France cycling event. Using two related methods, Ecological Footprint (EF) Analysis and Environmental Input-Output Analysis (ENVIO), the authors sought to show the relationship between consumption and environmental impact from different perspectives.

In their research, Li and Jago [41] analysed major economic impact assessment models using a meta-review analysis. A key shift in the exploration of major events was reflected in the following: the transition from one approach to a multidisciplinary approach; assessment of the broader category of event expenditures; using the CGE model instead of the simple I-O model; assessment of broader economic effects; and calculating the full economic effects on GDP, welfare, employment and other. The impact of mega-events on tourism development was addressed by Li and McCabe [42] who proposed the integration of CGE and CBA models, as the CGE model measures the economic benefits of an event, while the CBA model covers a wide range welfare effects such as social, political and environmental well-being in the community. Dwyer et al. [21] used two methods of measuring the impact of events: Economic Impact Analysis (EIA) and CBA. The findings suggest that it was essential to use an adequate method to measure the economic impact of events and in future, a solution needs to be found to bridge the gap between the methods.

The Westfield International Air Show (WIAS) is a major special event that has great economic importance and impact [56]. Trade Market Analysis (TMA) provides an accurate assessment of the economic impact of WIAS, which delimits local and non-local populations. Sato et al. [52] used OLS multiple regression and multiple imputation methods to estimate the key cost determinants of mass participant sports events (MPSEs) over five years (2008-2012) and concluded that sporting events have the effect of increasing the spending of repeat visitors on food, drink and lodging. A medium-sized event – the 2013 European Athletics Indoor Championships (EAIC) – was the subject of research by Andersson et al. [4] and contributed to the development of strategies to increase social, economic and environmental sustainability through the use and non-use value, consumer surplus, direct economic impacts, environmental footprint analysis and shadow cost. Barquet et al. [5] applied a Tobit censorate model to estimate the various determinants of visitor travel costs within a medium-sized event, the Biathlon World Cup 2009. The results suggested that a significant consumer segment, the so-called heavy consumer segment, which consumes more than $401 at an event, consists of visitors between the ages of 41 and 50 years old. Regression analyses used to evaluate the economic impact of another medium-sized event, the Two Oceans Marathon held in South Africa in 2011, showed that spectator spending plays a significant role in the economic value of an event, especially marathons [37]. Huang et al. [30] considered the total expenditures of visitors, as well as the new inflow of money, as a result of three major sports events: Formula One Grand Prix (F1), the ATP World Tour Masters 1000 (ATP), and the Shanghai International Marathon (SIM) in Shanghai, China, using I-O analysis. The economic impact of F1 was nearly three times greater than that of the ATP event and

nine times greater than that of SIM. Using the ARIMA technique, Baumann and Matheson [6] sought to assess the extent to which the Pro Bowl, the Hawaii Bowl, the Honolulu Marathon, and the Ironman Triathlon Baumann events affect tourist numbers in Hawaii by using daily tourist arrival data at the airport for the period between 2004 and 2015. The effect of the Honolulu Marathon daily tourist arrivals was found to be positive and statistically significant, resulting in an additional 3,900 tourist arrivals.

The research conducted by Kwiatkowski et al. [38] deals with the consumption estimation of a small-scale event – the Warnemünder Woche (a German sailing

Table 2: The structure and characteristics of the selected literature (2010-2018)

Author(s)	Title	Journal	Event	Type of event	Region	Method(s)
Collins, A, Munday, M., & Roberts, A. (2012)	"Environmental consequences of tourism consumption at major events: An analysis of the UK stages of the 2007 Tour de France"	*Journal of Travel Research*	2007 Tour de France	Major event	U.K.	Ecological Footprint (EF) analysis; Environmental Input-Output analysis (ENVIO)
Warnick, R. B., Bojanic, D. C, & Xu, F. (2015)	"Using a trade market analysis technique to refine measurements for economic impact analysis of special events"	*Journal of Travel Research*	Westfield International Air Show (WIAS)	Large special event	U.S.	Trade market analysis
Sato, M., Jordan, J. S., Kaplanidou, K., & Funk, D. C. (2014)	"Determinants of tourists' expenditure at mass participant sport events: A five-year analysis"	*Current Issues in Tourism*	Mass participant running event held in Miami, Florida	Mass participant sport events (MPSEs)	U.S.	Ordinary least squares multiple regression analysis; multiple imputation method
Giampiccoli, A., Lee, S. S., & Nauright, J. (2015)	"Destination South Africa: Comparing global sports mega-events and recurring localised sports events in South Africa for tourism and economic development"	*Current Issues in Tourism*	2010 FIFA World Cup vs Comrades Marathon, Midmar Mile and Dusi Canoe Marathon	Sports mega-event vs regional sporting events (SPEs)	South Africa	Multiple aspect approach; comparative analysis
Li, S., & Jago, L. (2013)	"Evaluating economic impacts of major sports events – A meta-analysis of the key trends"	*Current Issues in Tourism*	No specific event	Major sports events	No specific region	Meta-review analysis
Li, S., & McCabe, S. (2013)	"Measuring the socio-economic legacies of mega-events: Concepts, propositions and indicators"	*International Journal of Tourism Research*	No specific event	Mega-events	No specific region	An integration of CGE and CBA methods
Kwiatkowski, G., Diedering, M. & Oklevik, O. (2018)	"Profile, patterns of spending and economic impact of event visitors: Evidence from Warnemünder Woche in Germany"	*Scandinavian Journal of Hospitality and Tourism*	Warnemünder Woche (German sailing event)	Small-scale event	Germany	Evaluation of visitors spending patterns
Andersson, T. D., Armbrecht, J., & Lundberg, E. (2016)	"Triple impact assessments of the 2013 European athletics indoor championship in Gothenburg"	*Scandinavian Journal of Hospitality and Tourism*	European Athletics Indoor Championships 2013 (EAIC)	Medium sized event	Sweden	Use- and non-use value, consumer surplus, direct economic impacts, ecological footprint analysis and shadow cost
Dwyer, L., Jago, L., & Forsyth, P. (2016)	"Economic evaluation of special events: Reconciling economic impact and cost–benefit analysis"	*Scandinavian Journal of Hospitality and Tourism*	No specific event	No specific event	No specific region	Economic Impact Analysis (EIA) and Cost-Benefit Analysis (CBA)

Author(s)	Title	Journal	Event	Type of event	Region	Method(s)
Li, S., Blake, A., & Cooper, C. (2011)	"Modelling the economic impact of international tourism on the Chinese economy: A CGE analysis of the Beijing 2008 Olympics"	*Tourism Economics*	Beijing 2008 Olympics	Mega-event	China	Computable General Equilibrium (CGE) analysis
Barquet, A., Brida, J. G., Osti, L., & Shubert, S. (2011)	"An analysis of tourists' expenditure of winter sport events through Tobit censorate model"	*Tourism Economics*	Biathlon World Cup 2009	Medium sized event	Italy	Tobit censorate model
Kruger, M., Saayman, M., & Ellis, S. (2012)	"Determinants of visitor spending: An evaluation of participants and spectators at the Two Oceans Marathon"	*Tourism Economics*	Two Oceans Marathon	Medium sized event	South Africa	Regression analyses
Huang, H., Mao, L. L., Kim, S.-K., & Zhang, J. J. (2014)	"Assessing the economic impact of three major sport events in China: The perspective of attendees"	*Tourism Economics*	Formula One Grand Prix (F1), ATP World Tour Masters 1000 (ATP), and Shanghai International Marathon (SIM)	Major sport events	China	Input-Output analysis
Baumann, R. W., & Matheson, V. A. (2017)	"Many happy returns? The Pro-Bowl, mega-events, and tourism in Hawaii"	*Tourism Economics*	Pro Bowl, Hawaii Bowl, Honolulu Marathon, Ironman Triathlon	Mega-events	U.S.	ARIMA process
Meurer, R., & Lins, H. N. (2018)	"The effects of the 2014 World Cup and the 2016 Olympic Games on Brazilian international travel receipts"	*Tourism Economics*	2014 World Cup and the 2016 Olympic Games	Major events	Brazil	Natural logarithms of the receipts and real exchange rates series
Fourie, J. , & Santana-Gallego, M. (2011)	"The impact of mega-sport events on tourist arrivals"	*Tourism Management*	Summer and Winter Olympic Games, FIFA World Cup, Cricket World Cup, Rugby World Cup, Lions Tour	Mega-events	15 countries	Gravity equation model
Allan, G. J., Lecca, P., & Swales, K. (2017)	"The impacts of temporary but anticipated tourism spending: An application to the Glasgow 2014 Commonwealth Games"	*Tourism Management*	Glasgow 2014 Commonwealth Games	Mega-event	U.K.	Computable General Equilibrium (CGE) analysis
Nishio, T. (2013)	"The impact of sports events on inbound tourism in New Zealand"	*Asia Pacific Journal of Tourism Research*	1983 British Lions Tour, 1987 Rugby World Cup, 1990 Commonwealth Games, 1992 Cricket World Cup, 1993 British Lions Tour, 2000 America's Cup, 2003 America's Cup, 2005 British and Irish Lions Tour	Mega events	New Zealand	AR(1) model
Kim, M. K., Kim, S.-K. Park, J.-A., Carroll, M., Yu, J.-G., & Na, K. (2017)	"Measuring the economic impacts of major sports events: The case of Formula One Grand Prix (F1)"	*Asia Pacific Journal of Tourism Research*	Formula One Grand Prix (F1)	Major event	China	Input-Output analysis

Source: Authors

event). The authors concluded through the evaluation of visitor spending patterns that organisers of smaller sporting events must be careful when assessing the economic impact of these events because unlike mega-events, the largest number of visitors to smaller sporting events were visitors coming from the country of the event. In the case of Warnemünder Woche, a quarter of visitors were locals.

To summarise, in studies published between 2010 and 2018 there was a slight increase in the number of mega and major events researched, compared to the previous period, 2000 to 2009. These events account for 63.2% of the studies presented in Table 2. The emphasis remained on analysing the economic impact of sporting events organised in the United States, Australia, New Zealand and the United Kingdom, however, each country's share was reduced in comparison to the earlier period. Finally, Table 2 indicates that I-O analysis is no longer the dominant method used for research, whereas it had been in the previous ten-year period.

Results of evaluative bibliometric analysis

In the following text, the results of the evaluative bibliometric analysis are presented. Firstly, the structure of the whole sample based on the distribution of the papers across the journals is presented in Table 3.

The total number of papers is almost equal between the two observed time frames (2000-2009 and 2010-2018), with a difference between the 2000-2009 and 2010-2018 periods for the following journals: Tourism Economics, Current Issues in Tourism, the Scandinavian Journal of Hospitality and Tourism and the Asia Pacific Journal of Tourism Research. These journals were launched more recently in comparison with the others included in the sample and have published more articles related to the topic in the latter period of 2010-2018. Their increasing interest in publishing articles that assess the economic impact of sporting events in tourism is in line with the expected higher level of citation related to the topic. Based on Bradford's bibliometric law, the study suggests that research findings were found to be consistent with Bradford's argument that majority of the articles are centred in core journals, or in this specific case one journal (Tourism Economics) with a double number of the articles in comparison to the International Journal of Tourism Research as a second most frequent. Concerning Price's bibliometric law, the study scientific production cannot be perceived as exponential [26], due to almost equal number of the articles in the both of the observed time frames (18 articles in the 2000-2009 and 19 in 2010-2018).

The analysis of the data in the 37 papers led to the construction of a list of 84 unique keywords. This step was initiated to determine the prevalent themes within the topic of interest. The frequency of the most common keywords is documented in Table 4, highlighting only words which appeared more than two times. Some keywords with similar meanings were carefully combined and proposed as one, to reduce the final number of keywords and to provide a wider understanding of the prevalent themes.

To visualise and understand the relationships between keywords, a word cloud of keywords was created. The figure

Table 3: The journal distribution of the papers

Journal	Number of the papers	2000-2009	2010-2018
Tourism Economics	10	4	6
International Journal of Tourism Research	5	4	1
Journal of Travel Research	4	2	2
Current Issues in Tourism	4	1	3
Tourism Management	4	2	2
Scandinavian Journal of Hospitality and Tourism	3	0	3
Annals of Tourism Research	3	3	0
Asia Pacific Journal of Tourism Research	3	1	2
Tourism Geographies	1	1	0
Total	**37**	**18**	**19**

Source: Authors

shows a relative indication of how frequently a specific keyword was used in different papers. Its importance was visualised through the size and place of the words within the word cloud, suggesting the higher importance of the specific theme in the research context (Figure 1).

According to the Table 4 and Figure 1, the keywords 'economic impact' and 'sports events' are identified as the most commonly used, which was expected due to the specific nature of the topic investigated. Also, keywords that focus on specific events were also identified (for example, the Olympics and FIFA World Cup). Finally, the importance of the methodologies used for the economic assessment (I-O and CGE analysis) and tourist expenditure of the sports events was also underlined.

The 37 articles produced a dataset of 3.754 Google Scholar, 1.235 Scopus and 1.173 Crossref citations. The average mean of the citations of the selected papers was 101.46 for Google scholar, 33.38 for Scopus and 31.70 for Crossref (Table 5). Some authors [31; 57] have underlined the importance of citations as critical variables in the construction of journal rankings, and the contribution of a paper to a given specific topic. Also, the issue of self-citations within the bibliometric studies has been addressed, as Nisonger [48] stated that self-citation could be observed as a part of the citation analysis.

According to the citation data, the leading papers in the field are Lee and Taylor [39], Dwyer et al. [20], Fourie and Santana-Gallego [23], Kasimati [35], Jones [33], Daniels et al. [18], Gelan [24], and Cannon and Ford [10]. Of the different citation counts, Crossref citations within Social Science Citation Index were seen as a most appropriate measure of a paper's influence and contribution in the

Table 4: Repeated keywords within the dataset

Keyword	Number of repetitions	2000-2009	2010-2018
economic impact	16	9	7
sport events	11	3	8
sport tourism (travel)	10	5	5
mega-event	8	4	4
tourism (industry; international)	5	1	4
FIFA (2010) World Cup	4	1	3
Summer Olympics (games)	4	2	2
tourist expenditure	3	1	2
computable general equilibrium models (CGE)	3	1	2
impacts (analysis)	3	0	3
input-output analysis (I-O)	3	2	1

Source: Authors

Figure 1: Word cloud of the keywords in the dataset

Source: Authors

Table 5: Distribution of the citations across the papers selected for the study

Papers	Google scholar	Scopus	Field-weighted citation	Crossref	Crossref cites/per year
Daniels (2004)	69	24	0.72	17	1.13
Collins et al. (2012)	39	20	0.54	19	2.71
Dwyer et al. (2006)	**242**	**119**	**7.32**	**88**	**6.77**
Warnick et al. (2015)	19	8	0.82	10	1.67
Sato et al. (2014)	23	14	5.76	14	2.8
Giampiccoli et al. (2015)	47	27	3.74	22	3.67
Li & Jago (2013)	48	23	1.48	18	3
Madden (2002)	119	51	0.5	35	2.06
Li & McCabe (2013)	38	19	1.3	9	1.29
Lockstone & Baum (2008)	29	6	0.49	5	0.45
Jones (2001)	**365**	**N/A**	**N/A**	**115**	**6.39**
Kasimati (2003)	**448**	**N/A**	**N/A**	**109**	**6.81**
Li & Blake (2009)	49	25	1.08	21	2.1
Kwiatkowski et al. (2018)	9	5	4.01	4	2
Andersson et al. (2016)	18	9	1.38	6	1.5
Dwyer et al. (2016)	13	7	1.04	6	1.5
Ryan & Lockyer (2001)	35	19	1.77	11	0.61
Cannon & Ford (2002)	**159**	**84**	**1.5**	**65**	**3.82**
Hodur et al. (2006)	37	10	1.36	7	0.54
Jones (2008)	35	23	1.22	19	1.73
Li et al. (2011)	61	39	2.53	30	3.75
Barquet et al. (2011)	41	23	1.26	23	2.88
Kruger et al. (2012)	25	10	1.46	9	1.29
Huang et al. (2014)	19	11	1.22	11	2.2
Baumann & Matheson (2017)	2	2	0.69	2	0.67
Meurer & Lins (2018)	3	3	2.74	2	1
Connell & Page (2005)	39	19	0.37	16	1.14
Breen et al. (2001)	110	40	0.62	24	1.33
Lee & Taylor (2005)	**570**	**219**	**5.92**	**166**	**11.86**
Fourie & Santana-Gallego (2011)	**326**	**142**	**5.78**	**122**	**15.25**
Allan et al. (2017)	7	2	0.62	2	1
Daniels (2007)	150	39	1.37	31	2.58
Daniels et al. (2004)	**249**	**81**	**2.99**	**51**	**3.4**
Gelan (2003)	**263**	**94**	**2.52**	**65**	**4.06**
Agrusa et al. (2009)	22	6	0.27	6	0.6
Nishio (2013)	17	9	0.56	8	1.33
Kim et al. (2017)	9	3	1.03	5	1.67

Source: Authors

field [28], thus articles that have more than 100 citations, such as Lee and Taylor [39], Fourie and Santana-Gallego [23], Jones [33] and Kasimati [35], were found to be the most influential. Among the above-mentioned papers, the Lee and Taylor [39] study were identified as the paper with the highest number of citations, while the Fourie and Santana-Gallego [23] research was the paper with the highest number of citations per year.

The distribution of the citations across the journals was also of interest within this phase of the research (Table 6).

The data in Table 6 suggest that papers published in Tourism Management have the highest number of citations regarding the economic impact of sporting events, while the Scandinavian Journal of Hospitality and Tourism, Tourism Geographies and the Asia Pacific Journal of Tourism Research have the least number of citations. The high number of citations of Tourism Management could arise as a result of wider acknowledgement of the papers published in Tourism Management, which is globally recognised as a leading journal in the field. These findings' were consistent with the Li and Jago [41] study, confirming

Table 6: Journals distribution of the citations

Journal	Google scholar	Scopus	Crossref
Journal of Travel Research	369	171	134
Current Issues in Tourism	237	150	89
International Journal of Tourism Research	929	50*	259
Scandinavian Journal of Hospitality and Tourism	40	21	16
Tourism Economics	417	224	179
Tourism Geographies	39	19	16
Tourism Management	**1013**	**403**	**314**
Annals of Tourism Research	662	214	147
Asia Pacific Journal of Tourism Research	48	18	19

Notes:*some data was unavailable;
Source: Authors

that Tourism Management, Annals of Tourism Research and Journal of Travel Research were generally rated as top journals in tourism, so it is expected that studies published in these journals generally have substantive theoretical and/or methodological contribution and consequently receive a larger number of citations.

Conclusion

The study implements the longitudinal bibliometric analysis of the sporting event economic impact assessment academic literature. Study performs evaluative bibliometric data intending to provide an understanding of the complex knowledge systems. Based on the two-stage approach: comprehensive literature review and evaluative bibliometric analysis that includes keyword analysis and citation analysis, the following conclusions were drawn:

a) Compared to the first decade (previous ten-year period), the second decade of the 21st century is characterised by a slight increase in the number of researched mega and major events, more even distribution of sporting events among the regions of the world, but also the fact that IO analysis is no longer the dominant research method, as there is an increasing use of CGE for the purposes of the sporting event economic impact assessment;
b) Most of the papers were published in one journal (Tourism Economics), that confirms the validity of Bradford's bibliometric law in the field of analyzing economic impact of the sport events;
c) The production of papers related to the economic impact of sporting events did not occur exponentially, but almost evenly during the two analysed comparative periods, thus rejecting the applicability of Price's bibliometric law in this specific study;
d) Specific events, such as the Olympics and FIFA World Cup, as well as the issue of tourist expenditure, stand out among the dominant areas of interest of researchers, while the frequent use of I-O and CGE analysis indicates the importance of these methodologies for the economic assessment;
e) The most impactful paper, in terms of citations and thus the impact on the development and modelling of scientific thought within the researched tourism specialism is Lee and Taylor [39] study, while the highest number of citations per year was achieved by Fourie and Santana-Gallego [23];
f) The most impactful journal is Tourism Management, which, despite the mediocre number of published papers on the research topic, achieved the largest number of citations and thus confirmed the dominant position it occupies among tourism journals.

The study contributes to the existing literature, as it sheds light on a specific research niche within the tourism discipline through a comprehensive literature review and bibliometric analysis. In addition, the paper contributes to the ongoing discussion related to the economic impact of sporting events by providing a better understanding of the examined theme. The theoretical contribution is reflected in the fact that the analysis of papers published in tourism journals provides an interdisciplinary understanding beyond sports management literature. Finally, the

evaluative bibliometric analysis performed represents the solid foundations for further relational (network analysis) understanding of the discipline/specialism academic community. In addition to the theoretical, the practical contribution of the work is indisputable, since the manuscript, through a better understanding of the research subject, contributes to better organisation, management and greater profitability of sports events.

The main limitation of the research comes as a result of the fact that relative bibliometric analysis was ignored, especially, since it is widely known that it can provide insight into the connections and relationships that are established between the papers and their authors through citations. In the following studies, the authors of this paper will try to resolve this limitation and provide an even deeper understanding of the research problem using Social Network Analysis (SNA).

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Darko Dimitrovski

is an Associate Professor at the Faculty of Hotel Management and Tourism in Vrnjačka Banja, University of Kragujevac. He has been involved in postdoctoral fellowship at University Trás-os-Montes and Alto Douro (UTAD), Portugal. He is Associate Editor of Hotel and Tourism Management, and Editorial board member of Tourism Management Perspectives (SSCI Master Journal List; IF 1.779), European Journal of Tourism Research (ESCI, SCOPUS), Journal of Global Business Insights (published by University of South Florida) and Social Sciences & Humanities Open (Elsevier). He has authored several of articles in the leading peer reviewed international journals. His research interest is largely focused on special interest tourism, with special focus on event tourism. He was engaged as researcher in several international cultural tourism related projects.

Miljan Leković

is an Assistant Professor at the Faculty of Hotel Management and Tourism in Vrnjačka Banja, University of Kragujevac, where he teaches Principles of Economics and National Economy. He graduated and completed his PhD studies at the Faculty of Economics of University of Kragujevac. He is an author of numerous papers published in national and international journals and proceedings. He is the President of the Faculty Council, a member of the Quality Assurance Committee of the University of Kragujevac and the Executive editor of the scientific journal Hotel and Tourism Management. He is a reviewer of the scientific journals Economics of Agriculture, Hotel and Tourism Management, Economic Alternatives and Ekonomika. His research interest is focused on the financial economics and macroeconomics.

Marijana Đurađević

is a PhD candidate at the Faculty of Hotel Management and Tourism in Vrnjačka Banja, University of Kragujevac. She has been working as a teacher of the economic group of subjects at the High School of Culinary Arts and Tourism with Dormitory in Vrnjačka Banja, since 2008. During her work at the school, she was a mentor to students at domestic and international competitions. She was also the moderator of a school project within an international project "Meet my country". Her research interest is focused on event tourism, service quality and service quality models. She is an author of several papers published in national journals and national and international proceedings.