History of the Journal of Sport Management (JSM), 1987-2015: Citation and Co-Citation Network Analysis

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In 1987, when the first issue of the JSM was published, sport management was defined in the NASSM Constitution as “management theory and practice specifically related to sport, exercise, dance, and play as these enterprises are pursued by all sectors of population” (NASSM, 1986, p. 1). Now, sport management is defined as “cross-disciplinary and relates to management, leadership, and organization in sport; behavioral dimensions in sport; ethics in sport management; sport marketing; communication in sport; sport finance; sport economics; sport business in the social context; legal aspects of sport; sport governance; and sport management professional preparation” (NASSM, 2016). As we can see in the definition, the boundary of the field of sport management has been changed and specified since the inauguration of the JSM in 1987.

To date, many academic practitioners have provided insights to these philosophical questions regarding the matter of legitimacy of sport management (e.g., need of theoretical development, need of diversified paradigms and theories, need of wider range of topics, need of diversified methods) based on the experiences of their own (e.g., Chalip, 2006; Chelladurai, 2013; Cunningham, 2013; Doherty, 2013; Fink, 2013; Irwin & Ryan, 2013; Paton, 1987; Pitts, 2001; Slack, 1991; Zeigler, 2007), qualitative analysis (e.g., Costa, 2005), or meta-analysis (e.g., Kim, Lee, Magnusen, & Kim, 2015). Yet those individual insights and qualitative techniques are subject to limited researchers’ deductive observations. Meta-analysis has potential limitations in terms of the criteria used to choose studies from various research settings (Cooper & Hedges, 1994). To fill this gap, the purpose of this study is threefold. First, the present study identified the most influential documents by identifying most frequently cited documents as time goes by. Secondly, the study provides a ‘mirror image’ of the JSM that enables us to revisit the past achievements and provide a guide for future research in the field as a self-monitoring tool. Mapping the knowledge structures of the JSM would help scholars to embrace the diversity of the field, initiate and involve in more conversations across different subfields and contemplate alternative points of view. By using principal component analysis and social network analysis, this study explored the trajectories of knowledge development in a longitudinal case study. Lastly, we examined if the co-citation networks of the JSM exhibits “small world” phenomena through testing clustering coefficients for the future implications (Hanneman & Riddle, 2005).

The raw data of citations and co-citations were extracted from the Web of Science (WoS) directly using SITKIS software (Schildt, 2002). After the thorough screening, overall, a total of 20,839 different publications were cited a total of 31,702 times in 664 JSM articles between 1987 and 2015. For the longitudinal network study design, five different networks were generated according to the different time periods – period 1 (1987-1993), period 2 (1994 – 2000), period 3 (2001 – 2005), period 4 (2006 – 2010), and period 5 (2011 – 2015) to illuminate the changes of intellectual structures as the field progressed.

At an individual document level, we conducted frequency analysis examining how many times the publication was cited during the certain period to identify the most impactful cited publications in each period. Secondly, we conducted principal component analysis (PCA) to provide further statistical evidence of the decomposition of the co-citation network (McCain, 1990). Based on the results of parallel analysis (Horn, 1965; Revelle, 2016), varimax rotation was performed to produce a simple structure by allowing independent documents to be loaded under a single factor (McCain, 1990; Ozcinar, 2015; White & Griffith, 1981). Only documents with loadings greater than ± 0.7 were chosen, interpreting each component as previous bibliometric studies suggested (e.g., McCain, 1990). Lastly,
network visualization was conducted using UCINET (Borgatti et al., 2002) to provide the detailed relational landscape.

Watts and Strogatz (1998) introduced a measure for undirected networks called ‘clustering coefficient’ to assess the extent to which a network had areas of high and low density that can be used as an indicator of “small world networks”. This clustering coefficient can be measured by calculating the individual clustering coefficient - the density of ties in each node’s ego network (i.e., the density of ties among nodes connected to a given node) (Borgatti et al., 2013). The overall clustering coefficient is the mean of the clustering coefficient of all the nodes. We can consider a certain network as a small world network if the clustering coefficient of the observed network is larger than random graphs (in which the clustering coefficient will be very close to graph density) (Borgatt et al., 2013).

During the first two periods between 1987 and 2000, the results of citation analysis showed that most-cited publications covered organization studies, reflective studies, and quantitative methods-related publications. PCA allowed us to see the emerged subdomains in the management area. While most of management studies in the first period were exploratory studies of intercollegiate athletic management, in the second period five different components presented different subdomains of management – leadership and organizational performance, organizational structure, diversity management, and organizational change. Also, in both periods, the components of reflective studies emerged. Between 2001 and 2005 (period 3), new central themes emerged. These new knowledge domains include tourism, marketing, sport economics, sport policy, and media in sport. Related to methods, particularly, structural equation modeling studies and the software designed for structural equation modeling (i.e., lisrel) were newly identified. Studies of qualitative methods were also identified for the first time. In period 4 (2006-2010), sport marketing was the dominant knowledge domain. Almost 50% of the most cited documentations cover the marketing contents such as fan behavior studies; 25% out of 45% of the total variance was also explained by sport marketing components (e.g., sponsorship, consumer behavior, brand management). The visualized network demonstrated that the group of marketing studies have related with studies of quantitative methods whereas the group of management studies have related with studies of qualitative methods. In period 5 (2011-2015), the popularity of fan behavior studies and publications on quantitative methods were still dominant as in period 4. A total of 27% of the total variance was explained by consumer behavior-related components. The group of fan behavior studies linked to the studies of quantitative methods strongly. Along with fan behavior domain, the visualized network showed that groups of corporate social responsibility in sport, institutional theory, studies of qualitative methods, and economics of professional sport teams were disclosed, respectively.

Lastly, it was intriguing that the results of clustering coefficient implied that co-citation networks of the JSM are small-world networks. This results allows us to attempt to model a scientific community of the discipline of sport management based on the “Mathew effect mechanism” to predict the future landscape of citation networks of the JSM using modeling technique such as the agent-based (Ionescu and Chopard, 2013). This will provide us sensible predictions for the evolution of influential publications such as how many publications will survive as a “preferred” document with a higher value of impact factors. More detailed results and implications will be discussed during the presentation.