Big Data Opportunities for Sport Management Research: New Perspectives on Data Sources and Modern Analytical Approaches

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As big data is increasingly becoming a tool for advancing scholarship, it is imperative for the discipline of sport management to keep pace with contemporary technology practices. The terms “big data” are increasingly being used to describe datasets and analytical techniques in applications ranging from social media to the IoT that require advanced and unique storage, management, and analysis techniques (Boyd & Crawford, 2012). Drawing on George et al. (2016, p. 1) adaptation of big data in management is about “collecting and managing large varied data.” The purpose of this research is to highlight the most promising opportunities of diverse data sources and modern analytical techniques that will leverage big data as a means to advance scholarship in sport management.

Although there are many new data sources to acquire big data from data exhaustion, community data, and self-quantification data sources (George et al., 2014), research in sport management can significantly benefit from three specific developments in data availability: public, community, and private. As new technologies and platforms become ubiquitous, more convenient means of accessing big data arise, particularly through social media, mobile, sensor, camera, transaction, and neuro/psychophysiological tools in those three domains. These data sources are mainly composed of text and images that come in the form of unstructured data, and, thus, researchers interested in these data streams may need to familiarize themselves with modern analytical techniques.

The new data sources further pose challenges to the use of traditional analytic approaches as data from community and private data usually come as unstructured and do not fit into a relational database. Many areas of sport management and practice are inherently interested in uncovering patterns and correlations to better understand sport organizations and individuals without imposing a preconceived structure. For instance, suppose one seeks to understand which factors of external forces influence individuals’ attitudinal formation and behavioral intentions using a sport product and service. There exists a wide range of potential predictors such as socio-cultural, personality, perception constraints, and motivation variables one could examine. Previous research in sport management are predominantly adopted a reduced-form approach, selecting limited number of predictors based on one or part of one theoretical framework and conceptual model to balance complexity parsimony (Putka et al., 2018). In this conceptual paper that focuses on the symbiotic relationship between new data sources and new data analytics techniques, we propose the previously overlooked predictors that advance the theory building in complex environments.

Our presentation yields three central insights. First, we discuss the potential data sources and features that are appropriate for sport management. Second, we discuss different types of analytical opportunities that may be associated with the various dimensions of big data and highlight potential strategies for developing methodological approaches via careful analysis and substantive research questions. Finally, we conclude with a discussion of four understudied areas of sport management which big data will exert transformative impacts.