How can we use social media to know more about visitors to natural areas?

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Introduction

Visitation to natural areas is increasing, with millions of visits each year to protected areas globally. A range of methods has been used to monitor these visitors including on and off site visitor surveys, track counters, and camera traps, but these methods can be expensive and provide limited spatial and temporal data (Wood et al. 2013). An increasingly important alternative source of information about visitors is available from social media in the form of user created content (Wood et al. 2013). Millions of people use platforms like Facebook, Instagram, Flickr, Twitter, and Snapchat with billions of posts every year (Kwak et al. 2010; Hausmann et al. 2018), including information about park visits (Wood et al. 2013). Social media data can be used to know more about visitors, such as temporal and spatial patterns of use based on the text, geodata and images posted on these platforms, with much of the data publically available, topical and increasing dramatically (Di Minin et al. 2015; Hausmann et al. 2018). This talk presents the results of a bibliometric analysis of current research on the use of social media to monitor tourism and recreation including in natural areas. Specifically, it assesses: (1) the extent of research on social media, on social media and tourism/recreation, and social media, tourism/recreation and natural areas. This includes assessing (2) when it was published, (3) where it was published, and (4) what disciplines publish on this topic.

Methods

A bibliometric analysis of the research on social media and visitation to natural areas was conducted using the Scopus database of academic publications on 20 March 2018. First, we searched for all publications on social media using the search terms (TITLE-ABS-KEY ("social media" OR flickr OR instagram OR facebook OR panoramio OR snapchat OR twitter OR "volunteered geographic information" OR mapmyfitness OR strava OR gpsies OR geocaching OR wikiloc). We then did a second search adding the terms (AND TITLE-ABS-KEY (Touris* OR Visit* OR Recreation*)) to assess information about social media and tourism. Finally, to focus on research in natural area tourism, the following terms were added: (AND TITLE-ABS-KEY (Park OR Protect* OR Reserve)). We only included journals and conference papers published in English. The number of papers per year, and the most popular journals and disciplines for each of the three searches were extracted from Scopus and analysed in Excel.

Results

The academic literature on social media is large with 54,999 papers and conference proceedings on social media in Scopus (Figure 1). The earliest paper was published in 1941, but the growth in the literature has been exponential since 2008 with 10,521 papers published in 2017. The most popular journals were from computing science, psychology and medicine, including the Association for Computing Machinery International Conference Proceedings Series (1033 publications), Ceur Workshop Proceedings (972), Computers in Human Behaviour (855), Plos One (418), Conference on Human Factors in Computing Systems

Proceedings (380) and Journal of Medical Internet Research (380). Overall, 49% of the social media literature was in computer science journals and 30% in social science journals.
The social media literature for tourism and recreation is much smaller, with only 2,002 publications, just 3.6% of the social media literature (Figure 1). The first paper was only published in 1992, and although publications in the field are increasing, the increase is not as dramatic as that for social media overall. The top five were in computer science, medicine and tourism including Association for Computing Machinery International Conference Proceedings Series (35 publications), Journal of Medical Internet Research (35), Tourism Management (30), Ceur Workshop Proceedings (22), and Plos One (19). The most common disciplines were computer science (39%), social science (31%) and business, management and accounting (24%).

The literature on natural areas was even more limited with only 108 publications, 0.2% of social media literature, with the first paper in 2002. Plos One (4 publications), Applied Geography (3), Journal on Protected Mountain Areas Research and Management (3), Journal of Outdoor Recreation and Tourism (3) and Scientific Reports (3) with the remaining journals having on or two papers. The most common disciplines were social science (32%), environmental science (27%), business, management and accounting (21%) and computer science (21%).

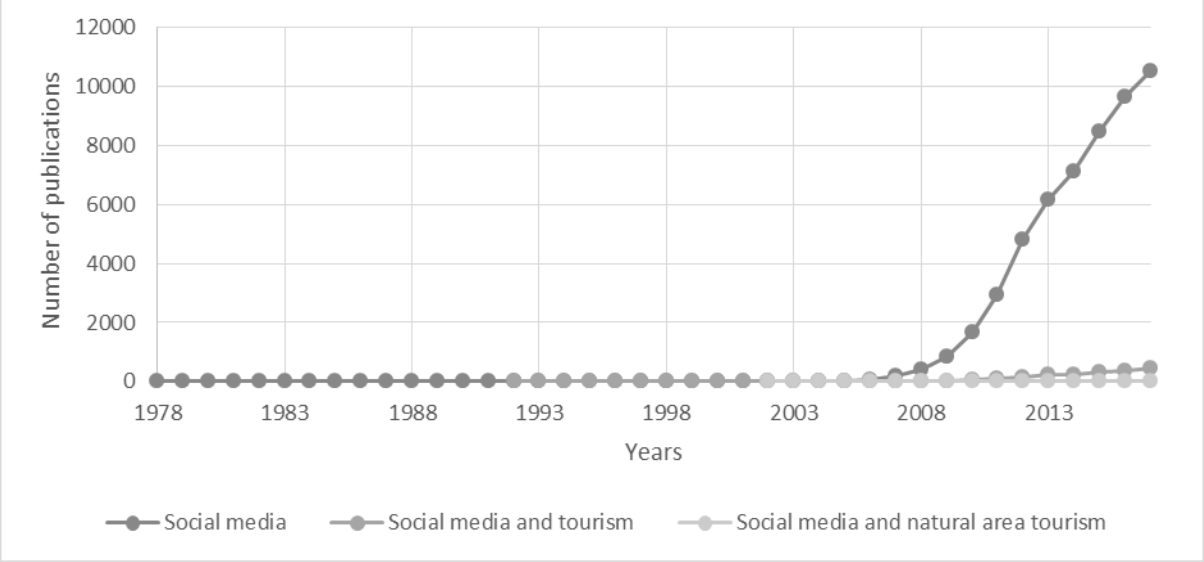

Figure 1. Number of publications per year on social media in general, on social media and tourism/recreation, and on social media and tourism/recreation in natural areas in Scopus.

Discussion

The interest in social media is massive, including in the academic literature, increasing dramatically from 2007 following the launch of several key social media platforms such as Facebook (2006), Twitter (2006), Flickr (2004), Panoramio (2005) and Mapmyfitness (2007). Most of the academic focus has been in the areas of computer science, with other disciplines slower to engage with the effects of social media. For natural area tourism and recreation this is even more apparent, with very few studies despite the obvious benefits of using social media data for monitoring visitors and assessing issues such as how they value protected areas. However, it is possible for managers and researchers to catch up on the social media tsunami by benefiting from the results of the broader tourism and recreation literature. This

includes learning more about the benefits and limitations of social media data for monitoring visitors, such as which platforms and what types of data (text, image, geodata, video, etc.) are most appropriate to use for which questions and why. In the future, the analysis of social media data is likely to affect the monitoring and management of protected areas, just as it affects nearly every other aspect of our lives.

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