



Reviews in Tourism

Cross-institutional collaboration networks in tourism and hospitality research

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ABSTRACT

This paper examines cross-institutional collaboration in tourism and hospitality research using a co-authorship network model based on papers published in six top-tier tourism and hospitality journals over the past 20 years. Data analysis reveals that multi-author, multi-university studies are the fastest-growing type of authorship structure in tourism and hospitality research. We use several network measures to evaluate the intensity of research collaboration among academic institutions in tourism and hospitality disciplines. Institutions with tourism and hospitality programs worldwide are ranked according to their centrality in cross-institutional research collaboration networks and categorized according to their characteristics in collaboration. The empirical analysis shows significant associations between research performance and a university's centrality position in cross-institutional research networks. Through advanced social network analysis, this study provides new insights into institutional collaboration in tourism and hospitality research over the past two decades.

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1. Introduction

Over the past two decades, research collaborations in all disciplines have grown significantly, not only at the within-institution level but also at the cross-institutional and international levels

(Glänzel & Schubert, 2005). Scientific collaboration has been shown to benefit both research productivity and impact (Eaton, Ward, Kumar, & Reingen, 1999; Inzelt, Schubert, & Schubert, 2009). The most common form of academic collaboration is co-authorship, which is a traditional topic of bibliometric studies.

In the fields of tourism and hospitality, bibliometric studies have been conducted to study the contributions of individual researchers and institutions to the academic community. These include studies of journal rankings (Frechtling, 2004; Jamal, Smith, & Watson, 2008; Park, Phillips, Canter, & Abbott, 2011), assessment of individual research performance (Park et al., 2011; Sheldon, 1991), identification of influential

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scholars and academic leaders (Zhao & Ritchie, 2007), and evaluation of research themes and methodologies (Benckendorff, 2009; Palmer, Sesé, & Montañó, 2005; Rivera & Upchurch, 2008). Some studies have used the social network analysis method, such as a study on citation networks (McKercher, 2008) and several studies on co-authorship networks (Hu & Racherla, 2008; Racherla & Hu, 2010; Ye, Li, & Law, *in press*). These studies provide useful insights into the ways in which researchers share, create, and disseminate knowledge in hospitality and tourism research. However, most existing studies in the field of hospitality and tourism management have focused on research collaborations at the individual level rather than the institutional level.

With the fast development in scientific research in recent decades, research collaborations in many fields of science, engineering, and social science have crossed university boundaries (Jones et al., 2008). A study by Jones and colleagues (2008) published by the elite journal *Science* showed that multi-university collaborations are the fastest-growing type of authorship structures in most disciplines. This phenomenon is attributed, in part, to the development of communication technologies, funding-driven collaboration, changing communication patterns, and the increasing mobility of researchers (Glänzel, 2001; Katz & Martin, 1997). In most cases, multi-institutional coauthored papers reflect the involvement of two or more institutions in research. This collaboration will benefit participating institutes and accelerate the diffusion of knowledge. However, empirical studies indicate that in many fields multi-university collaboration tends to produce outstanding scientific knowledge in fewer rather than more centers of high-impact science. A university-level analysis of co-authorship in hospitality and tourism studies will give insight into the roles, status, and outputs of multi-university collaboration in the field. It will answer questions like: How do institutions worldwide collaborate in hospitality and tourism management research? What institutes are the centers of these collaborative networks? And how do multi-university collaborations influence institutes' research performance?

Co-authorship network analysis is now easier than ever. The development of electronic indexing, archiving of academic publications, and emerging network analysis tools have all made it easier to analyze complicated co-authorship networks. Co-authorship networks are a typical form of social network, formed by authors who have jointly published papers. And co-authorship networks provide important information on the collaboration among members of the academic community. This study uses advanced social network analysis on papers published in six top-tier hospitality and tourism journals over the past 20 years. The analysis provides new insights into the collaboration in tourism and hospitality research from an institutional perspective.

The rest of the paper is organized as follows. The next section gives a brief review of published bibliometric studies in tourism and hospitality. Section 3 describes the methodology and data collection. Section 4 presents the research findings, and the last section summarizes the study and provides future directions.

2. Literature review

Bibliometric researchers have been interested in several questions: How is knowledge created and shared within the academic community? What is the best way to evaluate research output? How should the impacts of researchers and institutions be assessed? And how does a particular research field develop? Bibliometric studies have been conducted to address these questions. Traditional bibliometric methods include citation analysis and content analysis, but scientific collaboration network analysis has become popular recently because it directly examines cooperation among researchers and research institutions. Many studies have contributed to scientific collaboration research from the co-authorship perspective. Co-authorship can reliably track many aspects of scientific collaborations

(Glänzel & Schubert, 2005) and reflects more about the social nature of the academic community than traditional citation analysis.

These analyses have been conducted in a number of fields including physics, biology, computer science, management, and economics (Acedo, Barroso, Casanueva, & Galán, 2006; Barnett, Ault, & Kaserman, 1988; Newman, 2001a, 2001b). Published studies suggest that the co-authorship patterns and structures vary among disciplines and subjects (Newman, 2001a, 2001b, 2001c; Yoshikane, Nozawa, & Tsuji, 2006). Although scientific collaborations can be studied at the individual, institutional, or national level, most studies have done individual analysis in a specific research area. Fewer studies have investigated institutional collaborations. For example, Matthias and Martin (2004) examined the patterns of co-publications between US universities in economics. They found that geographical distance does not affect multi-institutional collaborations. In social science research, cross-institutional collaborations were found to have a citation impact advantage over within-institution collaborations, and elite universities dominate multi-institution collaborations (Jones et al., 2008).

In the tourism and hospitality field, bibliometric research has attracted considerable attention recently. Several studies were conducted to investigate research collaboration networks in this specific discipline, as well as in the associated academic community (Racherla & Hu, 2010; Tribe, 2010; Xiao & Smith, 2010; Ying & Xiao, *in press*). Some of the studies were carried out for practical purposes, such as tenure qualification and funding distribution (Collison & Sheldon, 1991; Pechlaner, Zehrer, Matzler, & Abfalter, 2004; Sheldon & Collison, 1990). Researchers are also interested in identifying academic leaders with a view to understanding knowledge flow in the tourism and hospitality field (Choi & Sirakaya, 2006; Law & Chon, 2007). Of the various types of bibliometric studies, analyses of co-authorship networks in hospitality and tourism have attracted little attention. Racherla and Hu (Hu & Racherla, 2008; Racherla & Hu, 2010) studied co-authorship networks in the hospitality and tourism fields. They mapped individual co-authorship networks, analyzed the distribution of co-authorships across geographic areas, identified key researchers using cohesive groups and structural holes, and calculated correlations between collaboration and publication productivity. Another recent study focused on co-authorship patterns in Australia and New Zealand tourism research (Benckendorff, 2010). It used social network analysis to examine roles and status of individual researchers, and it examined cross-institutional and multi-national collaboration in Australian and New Zealand universities. Ye et al. (*in press*) analyzed individual co-author networks and found that researchers' centrality in co-author networks is positively associated with their research productivity. Their study also showed that 59.3% of the nodes (authors) in the co-author networks are within the main component.

Although few papers have investigated collaborative networks from the institutional perspective, some have evaluated institutional performance in hospitality and tourism research using other methods. In the first such paper, Sheldon (1991) analyzed studies published in three top tourism journals in the 1980s, identifying leading scholars and their affiliations. Jogaratnam et al. (2005) carried out a similar study but extended the journal list and time frame. These two studies used four measures to evaluate academic institutions: the number of research publications, mean productivity per author, portions of output from a particular institution among total output, and number of contributions of authors in a given institution. Jogaratnam et al. (2005) included 11 tourism and hospitality journals in their study, spanning 1992 to 2001. Their findings indicated that institution rankings have changed considerably over the years. Zhao and Ritchie (2007) ranked universities according to the number of leading scholars based on data collected from eight leading tourism journals from 1985 to 2004. Park et al. (2011) reported the research contribution of universities together with that of individuals and countries in terms of publication productivity in quality journals (the same journal set used in this study) from

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