

## **Evolution of the Social Structure of Hospitality Management Literature: 1960–2016**

### **Abstract**

**Purpose:** This study addresses how the social structure of the hospitality management field has evolved from 1960-2016.

**Design/methodology/approach:** The informal social structure of the hospitality management literature was analyzed by collecting authorship data from seven hospitality management journals. Co-authorship analyses via network analysis were conducted.

**Findings:** According to the findings, throughout the history of hospitality management, international collaboration levels are relatively low. Based on social network analysis, the research community is only loosely connected, and the network of the community does not fit with the small-world network theory. Additional findings indicate that researchers in the hospitality management literature are ranked via degree centrality, closeness centrality, and betweenness centrality. Cliques, which contain at least five researchers, and core researchers are identified.

**Practical Implications:** This study help both scholars and practitioners improve the informal structure of the field. Scholars must generate strong ties to strengthen cross-fertilization in the field; hence, they collaborate with authors who have strong positions in the field. Specifically, this provides a useful performance analysis. To the extent that institutions and individuals are rewarded for publications, this study demonstrates the performance and connectivity of several key researchers in the field. This finding could be interesting to (post)graduate students. Hospitality managers looking for advisors and consultants could benefit from the findings. Additionally, these are beneficial for journal editors, junior researchers, and agencies/institutions.

**Originality/Value:** As one of the first study in the field, this research examines the informal social structure of hospitality management literature in seven journals.

**Keywords:** hospitality; social structure, co-authorship; network analysis; small-world network theory.

## Introduction

This study's primary purpose is to address how the social structure in hospitality management studies has grown and evolved. The social structure indicated by research collaborations is one significant method of identifying a discipline's direction as it evolves, as social structure generates the formal and informal networks that enable knowledge creation and dissemination (Zupic and Čater, 2015). Therefore, many studies have focused on research collaboration via authorship/co-authorship analysis (Abbasi *et al.*, 2011a; Acedo *et al.*, 2006; Ahmed *et al.*, 2017; Corrêa Jr *et al.*, 2017; Dehdarirad and Nasini, 2017; Elango and Rajendran, 2012; Glanzel and Schubert, 2004; Koseoglu, 2016; Koseoglu *et al.*, 2016; Kretschmer, 2004; Newman, 2004; Yan and Ding, 2009; Ye *et al.*, 2013). Specifically, hospitality literature includes several studies that combine tourism and hospitality together when examining social structure (Benckendorff, 2010; Jogaratnam *et al.*, 2005; Roberts, 1998; Ye *et al.*, 2013; Youn *et al.*, 2011; Zhao and Ritchie, 2007). Based on the sample size, time span, and mixed fields (tourism and hospitality combined), the scope of these studies was limited. However, to understand the maturity and sophistication of hospitality management as a field, studies including periodic reviews of only hospitality management literature (Rivera and Pizam, 2015) should be conducted. Consequently, this study examines the growth and evolution of the social structure resulting from collaboration within hospitality management research to gain more understanding about the maturity of hospitality research. This study's primary objectives include:

- Examining the evolution of authorship in hospitality management literature by sub-periods,
- Determining the topologies of a co-authorship network over time,

- Assessing whether the hospitality management network reflects the characteristics of a “small-world” approach by reflecting the characteristics of social networks (Watts and Strogatz, 1998),
- Determining the critical researchers in the co-authorship network; and
- Visualizing the authors in the largest component of the network.

Seven hospitality journals, including *Cornell Hospitality Quarterly (CHQ)*, *International Journal of Contemporary Hospitality Management (IJCHM)*, *International Journal of Hospitality Management (IJHM)*, *International Journal of Hospitality and Tourism Administration (IJHTA)*, *Journal of Hospitality Marketing & Management (JHMM)*, *Journal of Hospitality and Tourism Management (JHTM)*, and *Journal of Hospitality and Tourism Research (JHTR)* were included in this study. These journals were chosen because they are considered leading hospitality journals that have the highest journal impact factor (Impact Factor—Journal of Citation Report, 2017; SJR-Scopus, 2017) or highest reputation among researchers (Gursoy and Sandstrom, 2016). To examine whether hospitality management literature has a strong enough social structure to be an influential or separated field in academia, co-authorship analysis via social network analysis was utilized, as the existence of a discipline’s academic community indicates the scientific level of the discipline or field (Kuhn, 1970).

The paper comprises four sections. First, after explaining the definition of hospitality management and social structure, a critical literature review of that social structure within the hospitality field is provided. The second section describes the research methodology employed in this study. In the third section, the study’s findings are presented and discussed. Finally, the conclusions, study limitations, and opportunities for future research are highlighted.

## **Literature Review**

## Hospitality Management

Hospitality is a multifaceted concept, whose definitions come from either a semantic base or a practical base (Kelly, 2015). Semantically-based definitions of hospitality include four main characteristics:

- i) they are conferred on guests who are away from home;
- ii) they are interactive, involving the coming together of the provider and the receiver;
- iii) they comprise a blend of tangible and intangible factors; and
- iv) they involve the host providing for the guest's security and psychological and physiological comfort. (Hepple *et al.*, 1990)

Practice-based definitions of hospitality relate to the economic exchange between firms and customers (Kelly, 2015). For example, King (1995) indicated that commercial hospitality includes meals, beverages, lodging, and entertainment provided for profit. She divided commercial hospitality into two roots: minimum-level accommodations provided for commoners and accommodations provided for aristocrats (i.e., luxury-based hospitality). In this respect, the meaning of hospitality is not the same as that used by the hospitality industry or by other industries/academic disciplines (Lynch *et al.*, 2011). Commercial hospitality, or the hospitality industry, uses only one aspect of hospitality (i.e., food, drink, and accommodation) to determine service delivery or quality. Consequently, service delivery and quality do not fully cover the entirety of the hospitality phenomenon (Hemmington, 2007; Lugosi, 2008).

Given this disparity, researchers have redefined hospitality in the business context. For example, Hemmington (2007) suggested five criteria: the host-guest relationship, generosity, theatre and performance, little surprises, and safety and security. Lugosi (2008) developed a

model to explain hospitality that divided hospitality into three layers based on the spectrum of the transactions between the firm and the customer, including instrumental transactions and emotional spectrums. However, Lugosi (2008) and Hemmington (2007) indicated that hospitality is not always applicable, due to cost sensitivity relating to competition with rivals. Rather than employing hospitality, companies use benefits packages, including primary and peripheral products and services, to formulate and implement strategies, or they use the customer relationship management approach to enhance their emotional relationships with customers. Tasci and Semrad (2016) proposed detailed layers of hospitality based on Maslow's hierarchy of needs. In this model, the bottom layer of hospitality comprised the basic needs of people, such as food, shelter, and cleanliness, followed by sustenance, entertainment, service, and hospitableness (Tasci and Semrad, 2016).

The concept of hospitality is used in many industries, including tourism, healthcare, retail, and others providing services. From the research perspective, researchers from other disciplines or fields consider research and theories originally developed by hospitality researchers (Rivera and Pizam, 2015). For example, as seen in Figure 1, four hospitality journals (*IJCHM*, *IJHM*, *CHQ*, and *JHTR*) are indexed in the Social Science Citation Index (SSCI) used by many leading journals from the tourism, management, service, marketing, entrepreneurship, leadership, economy, sociology, and psychology fields. Based on the co-citations in the journals, strong ties between the tourism knowledge domain and hospitality management knowledge domain are indicated. However, ties among hospitality management and other disciplines' or fields' knowledge domains are very weak (specifically, psychology, sociology, and economy) although the hospitality management knowledge domain contain interdisciplinary and multidisciplinary characteristics as the hospitality management literature's primary strengths. In this case, hospitality management

engages with tourism literature more often than it does with the literature of other fields, or vice versa.

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### **The Social Structure of Hospitality Management Literature**

Social structure is a “persisting and bounded pattern of social relationships (or pattern of behavioral interaction) among the units (that is, persons or positions) in a social system” (House, 1981). The social structure of organizations has two components, formal and informal (Boorman and White, 1976; Casciaro, 1998). While formal structure includes relationships related to the reporting and authority, informal structure is related to social relationships that stem from advice seeking, communication, trust, knowledge sharing, and friendship (Hunter, 2016). These structures strongly impact the information flow or resources allocation within the organizations (Burt, 2009; Tsai, 2001, 2002). Collaborations in the scholarly research of given disciplines or fields generate networks constructed by social structure (Acedo *et al.*, 2006). This structure has been called the “invisible college” (Wagner, 2009), and is defined as:

[A] set of interacting scholars or scientists who share similar research interests concerning a subject specialty, who often produce publications relevant to this subject and who communicate both formally and informally with one another to work towards important goals in the subject, even though they may belong to geographically distant research affiliates.  
(Zuccala, 2006)

In this respect, hospitality management related to hotel or lodging management has a strong formal social structure, as many established associations manage business or policies related to hospitality. However, since other industries like healthcare, banking, education, and

retail use the term service to refer to a set of deliverables internally and externally provided by organizations, rather than hospitality referring to the experience perceived by customers or recipients (Aiello *et al.*, 2010; Hemmington, 2007), the formal social structure of hospitality management is weak in these industries.

In academia, there are three dominant perspectives about how hospitality schools should be structured. The first is that hospitality management should be integrated with tourism schools as a different faculty of a university, as seen at the School of Hotel and Tourism Management at the Hong Kong Polytechnic University, since hospitality management is used in the hotel management industry. The second perspective supports hospitality management as a department or school within a business school, as is seen at Cornell University's School of Hotel Administration in the SC Johnson College of Business. The final perspective indicates that hospitality management should be established as a separate faculty of a university, as is seen at the Rosen College of Hospitality Management at the University of Central Florida. All three programs enjoy a relatively high reputation within the field. However, these options reveal that hospitality management has an important problem related to its positioning within the academic environment, as these schools consider hospitality management as a periphery of the tourism and business fields.

A recognizable hospitality management academic community influences and interacts with other disciplines (Cheng *et al.*, 2011; McKercher and Tung, 2015). However, this level also sees similar, scattered positions related to identity. In fact, the interdisciplinary and multidisciplinary characteristics of the knowledge domain of hospitality management offer some opportunities to develop the scientific level of the domain, as the outcomes from interdisciplinary and multidisciplinary studies are more than the sum of individual outcomes (Choi and Pak, 2006,



2007). Some scholars identify as tourism faculty; others identify as hospitality researchers; and others, from different disciplines, consider hospitality as a laboratory for experiments. These outcomes may emerge from the position or use of power related to the (in)formal social structure of hospitality management. Creating social identity, defined as an “individual’s knowledge that he belongs to certain social groups together with some emotional and value significance to him of this group membership” (Tajfel, 1972) is key, as the informal social structure of hospitality management may involve only loose collaborations in research and leading scholars phenomenon in the field. Therefore, hospitality management must figure out how to find the optimal position for knowledge creation and dissemination to produce more impactful studies. To gain a stronger position in the knowledge system, the field must formulate and implement strategies. This study discusses how scholars in the invisible college are micro-foundations of those positional structures, and how, by understanding that college, the field of hospitality management can improve its overall position.

### **Methodology**

This study employed co-authorship analysis. Researchers have used co-authorship analysis to explore the dynamics of the invisible college in specific disciplines (Ahmed *et al.*, 2017; Batistič *et al.*, 2017; Dehdarirad and Nasini, 2017; García-Lillo *et al.*, 2017; Yu and Xu, 2017). To conduct co-authorship analysis the study considered the following steps –journal selection and the scope of the data, data preparation, and analysis:

#### **Journal Selection and the Scope of the Data**

This study considered hospitality management journals indexed in the Social Science Citation Index, Emerging Citation Index, and Google Scholar’s journal metrics (h5-index) to conduct a co-authorship analysis via social network analysis. The selected journals and the scope

of the data are presented in Table 1. Articles and research notes are considered, as they indicate a certified type of knowledge (Ramos-Rodríguez and Ruíz-Navarro, 2004). A total of 7499 articles were collected from seven journals. The number of the articles increases by year (Figure 2). The polynomial trend line ( $R^2 = 0.9604$ ) is assessed using different regression models (linear, exponential, logarithmic, and power law approaches) with dependent variables (published articles) and independent variables (year of publication) to identify the model that best fits the data (Barrios *et al.*, 2008).

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### **Data Preparation**

The researcher followed three steps to prepare the data. In the first step, the researcher manually inserted the articles' authors' names and affiliations into a spreadsheet to minimize or eliminate possible spelling errors in the database. All issues published in the journal, from the initial issue to final issue published in 2016, were included. In the second step, the researcher identified authors with the same names or initials, detected misspellings that occurred during insertion, and checked for spelling differences between the authors' names or combinations of authors' names with different initials or initial variations (Kumar and Jan, 2013) by utilizing frequency analysis. Finally, the researcher employed network analysis as a pilot test covering all articles to increase the study's validity and reliability, as followed in previous studies (Koseoglu, 2016). All errors, including misspellings, duplications of authors' names, and writing errors identified in the network were manually corrected in the data file.

### **Analysis**

The contributors, including authors, institutions, and countries, from the related journals, were inserted in a spreadsheet created in the Microsoft Excel software package. After cleaning the data, the Bibexcel software program was used to conduct the social network analysis and determine co-authorship. After this, co-authorship analyses via network visualizations and analyses to calculate related metrics were performed using the Pajek, VOSviewer, and UCINET 6 network analyses software packages. Seven sub-periods (before 1987; 1987–1991, 1992–1996, 1997–2001, 2002–2006, 2007–2011, and 2012–2016) were created based on the results of the trend analysis (Figure 2). The periods were generated to identify unknown patterns and trends in the literature from 1960 to 2016, rather than identifying them based on real periods, as indicated in Ramos-Rodríguez and Ruíz-Navarro (2004).

## **Research Findings and Discussion**

### **Authorship Data**

**Authorship structure by sub-period.** Authorship structure includes the number of author appearances, authors, articles per author, authors per article, multi-authored articles, authors of multi-authored articles, and the collaboration index. A collaboration index is calculated by determining the number of authors per joint paper (Elango and Rajendran, 2012). As seen in Table 2, the first period (before 1987) is longer than the other periods. After this period, the number of articles increased, resulting in shorter periods. The number of articles, author appearances, authors, multi-authored articles, and authors of multi-authored articles increased in each period. The final two periods (2007–2011 and 2012–2016) indicated the largest increase related to the five indicators, showing that interest in hospitality management has steadily increased over time. The primary factor of this trend may be the increased number of schools, authors, and Ph.D. programs in the field. In recent years, researchers from tourism and

hospitality schools have faced greater pressure to publish in hospitality-oriented journals (Shani and Uriely, 2017).

The results of articles per author, authors per article, and the collaboration index do not show much difference (Table 2) over time, thus illustrating that the level of collaboration among scholars is low. The research indicates that a research team usually consists of two scholars. This tendency is also confirmed by showing authorship patterns by periods (see Figure 3). Authorship patterns include five types of author structures: one author, two authors, three authors, four authors, and five or more authors. Figure 3 shows that multi-authored articles including at least two authors are dominant after the second period. Although the number of articles authored by four authors increases significantly in the last period (2012–2016), very few articles are authored by five or more authors. These findings are consistent with previous studies conducted for tourism and hospitality (Benckendorff, 2010; Roberts, 1998; Sheldon, 1991; Ye *et al.*, 2013; Youn *et al.*, 2011; Zhang, 2015; Zhao and Ritchie, 2007).

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Figure 4 presents how national and international collaboration among hospitality researchers has evolved over time based on four groups: single authors from single institutions and countries, two or more authors from one institution and one country, two or more authors from at least two different institutions in one country, and two or more authors from two or more institutions in two or more countries (Koseoglu, 2016). Based on the findings, national and international collaboration has grown in recent years. International collaboration plays a crucial role in the quality of research determining a field's maturity level (Sheldon, 1991). Sheldon (1991) also notes that “most institutions, however, require faculty to demonstrate independent

scholarship in addition to collaborative scholarship before tenure and promotion are granted.”

This continues today. Thus, to encourage maturity in the field, institutions should support international collaboration as well as independent scholarship.

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### **Co-Authorship Network of Hospitality Management Studies**

**Network attributes by periods.** To measure the maturity level of the co-authorship network of hospitality management, this study considers six common network attributes calculated by UCINET 6, including density; average distance; the clustering coefficient; the size of the largest component; and connectedness.

Table 3 presents the attributes of the network for each period. *Network density* is the number of relations divided by the maximum number of possible relations (<http://www.analytictech.com/ucinet/help/idx.htm>). Density is calculated between 0 and 1 as a degree of the connection between authors (Ying and Xiao, 2012). The density range of the network for each period is between 0.003 and 0.005, indicating a small density based on the degree 1. The density of the overall network is 0.005, illustrating high potential to link to many authors in the same or different fields (Ying and Xiao, 2012).

The *average distance* describes the average flow of information between any pair of authors in the disciplines or fields. Thus, the shorter distance a network has, the higher maturity the network has (Koseoglu, 2016; Ye *et al.*, 2012). For hospitality management studies, the average distance range is between 2.211 and 5.531. In the overall network, information passes through five individuals (4.995). The average distance in hospitality management (4.995) is less

than the average distance (7.2) of tourism and hospitality research, as conducted by (Ye *et al.*, 2013), indicating that the hospitality management co-authorship network is more intimate and extensive than seen in earlier studies (Ye *et al.*, 2013).

The *clustering coefficient* ( $C$ ) identifies how close one node's neighbors are to being a clique. Put simply, it describes the probability that one's friend's friend is also a friend of oneself.  $C = 0$  means that all the nodes are isolated, whereas  $C = 1$  means that all the nodes are directly connected (Ye *et al.*, 2013). In this study, the observed range is between 0.395 and 0.599. This means that the network is not highly clustered and that the relationships between authors are not close. However, in their study, Ye *et al.* (2013) found that  $C$  was 0.748, indicating that the network is highly clustered and the relationship between tourism and hospitality management authors is close. These results may either indicate that many researchers in hospitality management do not describe themselves as hospitality management researchers or that they have a strong attachment to their fields, as the diversity level is very high.

A component is a group of directly or indirectly interconnected researchers in a network (González-Teruel *et al.*, 2015). The *size of the largest component* demonstrates how extensive and intimate collaboration within the network is (Ye *et al.*, 2013). This component usually includes the most productive authors (Kretschmer, 2004). In the first period, there were 18 members; in the second, 51; in the third, 89; in the fourth, 36; in the fifth, 67; in the sixth, 121; in the seventh, 202; and overall, 401. These numbers have increased in each period after decreasing in the fourth period. This illustrates that the numbers of researchers focusing on hospitality management is increasing steadily.

The last attribute is *connectedness*. Connectedness is defined as “the number of connections within the network taking into account the number of possible relations. A complete

network exists when all the vertices that make it up are interconnected, that is, there are no vertices in isolation” (Ronda-Pupo and Guerras-Martín, 2010). In this research, the connectedness range is between 0.013 and 0.304 demonstrating that connectedness, as seen in the size of the largest component, grew within the network. As a result, the hospitality management co-authorship network was less cohesive and less organized around a particular actor or group of actors compared with other disciplines or fields, such as tourism and hospitality (Ye *et al.*, 2013), strategic management (Koseoglu, 2016), and management and organization (Acedo *et al.*, 2006) fields.

### **Is the Hospitality Management Co-Authorship Network a Small-World Network?**

Kronegger *et al.* (2012) stated that the small-world network structure for co-authorship networks refers to:

[N]etwork forms where the level of local clustering (one’s collaborators are also collaborators with each other) is high and the average number of steps between clusters is small. In these small world networks, internalities of clusters tend to form and make the clusters of scientists more cohesive clusters. In contrast, ties between clusters are fewer and the network is less cohesive overall. However, paths between actors in different clusters tend to be short. (p. 633)

A small-world network has three requirements: a short path length between any two vertices (authors), a large clustering coefficient (Watts and Strogatz, 1998), and meeting the characteristics of scale-free networks by following a power law distribution ( $p(x) = cx^{-\alpha}$ ). In a power law distribution, most networks have relatively low-degree nodes with very few high-degree nodes (Barabási, 2009; Barabási and Albert, 1999; Ye *et al.*, 2013). This demonstrates

that many authors demonstrate low performance, while only a small number of authors demonstrate high performance. The power exponent ( $\alpha$ ) in the power law distribution is generally negative, with the range of the value of the exponent between -2 and 3 (Dorogovtsev *et al.*, 2002; Ye *et al.*, 2013). As seen in Figure 5, the negative value (-1.375) of the power exponent ( $\alpha$ ) and the constant ( $c$ ) of 1128.4 indicates a good fit ( $R^2= 0.8751$ ). However, the co-authorship of hospitality management studies has a short average distance and the clustering coefficient is not large. Therefore, the degree distribution of the hospitality management literature network does not fit the properties of the small-world theory. In this respect, the hospitality management community has problems related to three issues impacting the maturity of the field: the diffusion speed of properties (data, energy, signals, contacts, and ideas) across the networks, boundary-breaking characteristics (Björneborn, 2004), and a universal organizing mechanism for social systems (Uzzi *et al.*, 2007). These issues can retard the progress of hospitality management, as theoretical and empirical progress on hospitality management shows exploitation innovation—the refinement or extension of existing theories or hypothesis (Rivera and Pizam, 2015)—rather than the exploration of innovation—experimentation with new theories.

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### **Critical Authors in the Network**

To identify critical authors in the discipline, three attributes, including individual centrality attributes, cliques, and identifying core authors, are considered.

**Individual centrality attributes.** Three centrality attributes were used to identify critical authors in the network: degree centrality, closeness centrality, and betweenness centrality. These



measurements were calculated using Pajek. Degree centrality represents the engagement a researcher has related to the number of collaborators they have in the network (Yan and Ding, 2009). Closeness centrality demonstrates the extent of an author’s influence over the entire network (Yan and Ding, 2009), and “the independence and efficiency for communicating with other nodes in the network” (Abbasi *et al.*, 2011, p. 597). Betweenness centrality identifies brokers, connectors, or gatekeepers in the network (Abbasi *et al.*, 2011a), who can connect other authors within the network (Acedo *et al.*, 2006). Table 4 presents the findings related to critical authors in hospitality studies based on these three attributes.

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**Cliques.** A clique is “a subgroup in which all its nodes are directly connected to each (while a cluster is a group of the same or similar elements gathered or occurring closely together)” (Abbasi *et al.*, 2011b). A clique identifies exclusive collaboration within a main group in the network, which provides a key for linking nodes to one another (Hu and Racherla, 2008). Table 5 presents observed cliques including at least five authors.

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**Core authors.** As a social network analysis program, UCINET 6 can identify both core and peripheral authors in networks. Table 6 presents the core authors in the co-authorship network of hospitality management. The findings indicate that the many of the core authors originate from the School of Hotel and Tourism Management, Hong Kong Polytechnic University.

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### **Visualization of Authors in the Largest Component Network**

Heat maps help researchers see the dominant researchers in a network. They “use warmer colors and bolded fonts to emphasize concepts that are frequently used, while words that are used only sporadically are shown in colder colors and subdued smaller fonts” (Zupic and Čater, 2015). To create a heat map, the software tool VOSviewer (Van Eck and Waltman, 2010) was used. Figure 6 presents the largest component network of the overall period. The network has 101 components. In the largest component, including 401 authors, four groups of authors can be distinguished. While the scholars from business schools including hospitality departments or independent hospitality schools are dominant in the left-side groups, those from tourism and hotel management schools are dominant in the right-side groups. The authors also looked other components of the network by using the UCINET 6 and Pajek software package programs. Based on the results, the second largest group includes 12 authors. There are two third-largest networks, each including 11 authors. They are very smaller components than the main components. Also many small components appear in the networks. These small components should be integrated with bigger components to strength the social structure of the field.

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### **Conclusions and Future Research**

This study examines the social structure of the hospitality management field. Data were obtained from articles and research notes published in seven leading hospitality management journals between 1960–2016. This study generates important contributions to hospitality management literature and represents one of the first published attempts to explore the social

structure of hospitality management literature via authorship and co-authorship analysis. The theoretical and practical implications of the study are discussed below.

### **Theoretical Implications**

The authorship structure in hospitality research demonstrates that multi-authored studies occur more often than solo-authored studies. However, the collaboration level in the field is often limited to two to three authors per paper, even though hospitality has multidisciplinary characteristics (Jones, 2004). More collaboration between researchers from different disciplines or fields is needed, as this type of collaboration influences the maturity level of disciplines via the quality of knowledge creation and dissemination (Cartes-Velásquez and Manterola, 2017; Oviedo-García, 2016).

In recent years (2012–2016), the number of articles involving international collaboration has increased. However, throughout the history of hospitality management, the level of international collaboration remains very low. The trend toward international collaboration that has arisen in recent years should be continued to increase the maturity of the field, as “the best science comes from international collaboration” (Adams, 2013).

Although hospitality management literature’s history is very old, based on the findings of the social network analysis, it is still a loosely connected research community. Additionally, the collaboration network does not fit with the small-world network theory. These situations indicate three possible issues relating to the growth of the field. First, while being interdisciplinary or multidisciplinary is a strength for the knowledge domain, it may contribute to an identity crisis since several researchers from tourism or business schools maintain critical positions within the hospitality management network, while not primarily identifying as hospitality management researchers. This identity crisis hinders or minimizes hospitality management’s ability to survive

and grow as a field. Therefore, researchers within the hospitality management community must clarify their positions in the knowledge system. Otherwise, the hospitality management community will be incorporated into the tourism or business fields, rather than remaining a unique and separate field.

The second issue is related to the boundary-breaking characteristics (Björneborn, 2004) of the field. Rivera and Pizam (2015) identified that the hospitality management community has been an innovator since 2000. However, innovations in the field are limited to refining or extending existing theories or hypotheses rather than experimenting with new ones although hospitality's unique focus allows it to be integrated with other fields, even natural science (Jones, 2004).

The third issue is related to the integration of hospitality management with a universal organizing mechanism for social systems (Uzzi *et al.*, 2007). In academia, a stereotype may exist that says, "Hospitality is only for tourism." This is because, in all academic activities, the words hospitality and tourism are used together. If this trend continues, the integration of hospitality management with other fields may be retarded. For example, there is a dearth of studies related to hospitality in healthcare, retail, and education.

To solve these problems or minimize these conflicts, the social identity theory can be used to clarify two identity-related motivations: self-enhancement and positive intergroup distinctiveness (Hogg, 2016). Second, "To optimize the collaboration network it is important to strengthen the connections between peripheral authors and mainstream authors, and to strengthen and tighten the existing collaborations" (Ye *et al.*, 2013, p. 72). This study offers three methods for developing the scientific level of the hospitality management knowledge domain by strengthening the social identity and collaboration networks within it, based on Kuhn's (1970)

paradigm shift approach. According to Kuhn (1970), science is a social system as well as a cognitive system. Kuhn claims that science as a social system is related to a field becoming an organized science community generated by scientists or scholars guided by the norms and values of science. He emphasizes that scientific communities should be identified before paradigms. However, paradigms in the discipline should be clarified by investigating the behaviors of the related communities because paradigms guide communities more than topics do. Only a few doctorate programs across the world are dedicated to hospitality. More doctorate programs dedicated to purely hospitality are needed, as these doctorate programs foster the discipline or field identity of scientists and researchers.

Second, as indicated by the current study's findings, scientific journals play critical roles in generating the science community of the discipline or field. Though the positions of the hospitality-focused academic journals published in English have improved in recent years based on the impact factors released by the *Journal of Citation Reports*, these journals do not occupy a strong position in the academic journal environment. This positioning also affects the scientific level of hospitality management's knowledge domain. Hospitality management researchers should publish more frequently in hospitality journals as well as other journals, as indicated by Shani and Uriely (2017). However, this is a short-term solution, as, in the long term, a closed system may be created, which would potentially curtail innovation in the field (Chesbrough, 2017; Lindgren and Emmitt, 2017). Additionally, when researchers publish hospitality topics in other journals, they should consider the findings and results of studies published in hospitality-focused journals.

The final recommendation is related to hospitality schools. As mentioned earlier, schools or institutions purely focusing on hospitality management teaching and research are rare. For

example, although the Rosen College of Hospitality Management has a dedicated hospitality management program, it focuses primarily on tourism-focused hospitality. To develop an identity in the hospitality management field, independent schools purely dedicated to hospitality—engaging in all related disciplines, from physiology to food science (Jones, 2004)—are needed, to produce the scientists or researchers who build and create the field’s identity.

Finally, researchers in the hospitality management literature are ranked via degree centrality, closeness centrality, and betweenness centrality. Additionally, core researchers and cliques including at least five researchers are identified. Many of those authors are amongst the most productive scholars in the field. This indicates that, in the future, a stronger network might emerge, but also that the hospitality management field might be dominated by the tourism field. This was proven by visualizing the largest components of the network.

### **Practical Implications**

The findings of the study provide a useful performance analysis. To the extent that institutions and individuals are rewarded for publications, this study demonstrates the performance and connectivity of several key researchers in the field. This finding could also be interesting to (post)graduate students. This study identified critical and core researchers in the hospitality management field. Thus, hospitality managers looking for advisors and consultants benefit from the findings. The findings of this study could help agencies or institutions make decisions on project grants by finding panel members, reviewers, and directions for proposals related to hospitality. Junior researchers, junior professors, or professors from other fields could use the findings of this study to elaborate on research trends and find collaborators from the hospitality management field.

### **Limitations and Future Studies**

This study has a few limitations. First, this study identified the social structure of the hospitality management knowledge domain using seven hospitality management journals written in English. Future studies may consider more journals, including journals from other knowledge domains, either in English or other languages. Additionally, future studies may focus on articles published in top conference proceedings to gain further understanding of the social structure of hospitality management research. Second, the implications of the study focused only on the informal social structure of the domain at the researcher level. Future research may examine the issues by focusing on the institutions or countries promoting the hospitality management knowledge domain. In future studies, researchers could look at the intellectual and contextual structures of hospitality management by using relational bibliometric methods, such as co-citation and co-word analysis (García-Lillo *et al.*, 2016; Zupic and Čater, 2015). Finally, this study only focused on the largest components of the network. Future studies could compare the structure of the other components of the network to gain deeper understanding regarding the knowledge production by distinct cultural-linguistic communities or groups. Furthermore, the components of the hospitality management knowledge system should be discussed to develop new directions for the field's growth (Tribe and Liburd, 2016).

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**Table 1. Scope of Data used**

<b>Selected Journals</b>	<b>Earliest issue</b>	<b>Latest issue</b>	<b># of articles</b>	<b>Impact* Factor by SSCI</b>	<b>SJR** Scopus</b>
Cornell Hospitality Quarterly (CHQ)	1960-v1(1)	2016-v57(4)	2430	2.657	1.996
International Journal of Contemporary Hospitality Management (IJCHM)	1989-v1(1)	2016-v28(12)	1199	3.196	1.745
International Journal of Hospitality Management (IJHM)	1997-v1(1)	2016-v59	1710	2.787	1.956
International Journal of Hospitality and Tourism Administration (IJHTA)	1997-v1(1)	2016-v17(4)	345	-	0.422
Journal of Hospitality Marketing & Management (JHMM)	1992-v1(1)	2016-v25(8)	667	-	1.556
Journal of Hospitality and Tourism Management (JHTM)	2006-v13(1)	2016-v29	228	-	0.723
Journal of Hospitality and Tourism Research (JHTR)	1976-v1(1)	2016-v40(6)	920	2.646	1.553

\* Retrieved from <https://jcr.incites.thomsonreuters.com/> (August 15, 2017)

\*\*Retrieved from <https://www.scimagojr.com/journalrank.php?category=1409> (August 15, 2017)

**Table 2. Authorship structure by sub-period**

<b>Periods</b>	<b>Before 1987</b>	<b>1987- 1991</b>	<b>1992- 1996</b>	<b>1997- 2001</b>	<b>2002- 2006</b>	<b>2007- 2011</b>	<b>2012- 2016</b>	<b>Over All</b>
# Articles	1248	652	725	864	943	1295	1772	7499
# Author Appearances	1549	1052	1273	1688	1929	2912	4600	15000
# Author	939	613	827	1012	1231	1723	2504	6724
Articles Per Author	1.33	1.06	0.88	0.85	0.77	0.75	0.71	1.12
Authors Per Article	0.75	0.94	1.14	1.17	1.31	1.33	1.41	0.90
# Multi-Authored Articles	254	325	424	570	666	1013	1517	4769
# Authors of Multi-Authored Articles	387	455	676	885	1105	1590	2396	5704
Collaboration Index	1.52	1.40	1.59	1.55	1.66	1.57	1.58	1.20

**Table 3. Network attributes of co-authorship (author level) network by periods**

<b>Periods</b>	<b>Before 1987</b>	<b>1987- 1991</b>	<b>1992- 1996</b>	<b>1997- 2001</b>	<b>2002- 2006</b>	<b>2007- 2011</b>	<b>2012- 2016</b>	<b>Over All</b>
# Articles	1248	652	725	864	943	1295	1772	7499
Density	0.005	0.004	0.003	0.007	0.007	0.007	0.007	0.005
Average Distance	2.211	3.953	5.531	3.271	4.910	4.624	5.423	4.995
Clustering co-efficient	0.395	0.444	0.554	0.526	0.599	0.453	0.455	0.339
Size of the largest component	18	51	89	36	67	121	202	401
Connectedness	0.013	0.021	0.030	0.032	0.046	0.115	0.254	0.304

**Table 4. Top 30 authors by degree, closeness , and betweenness centrality**

<b>Rank</b>	<b>Author</b>	<b>Degree</b>	<b>Author</b>	<b>Closeness</b>	<b>Author</b>	<b>Betweenness</b>
1	Rob Law	40	Seoki Lee	0.1799	Seoki Lee	0.0939
2	Anna S. Mattila	35	Rob Law	0.1681	Woo Gon Kim	0.0676
3	Seoki Lee	35	Woo Gon Kim	0.1663	Rob Law	0.0673
4	Soocheong (Shawn) Jang	29	Basak Denizci-Guillet	0.1627	Anna S. Mattila	0.0506
5	Woo Gon Kim	29	Anna S. Mattila	0.1626	Soocheong (Shawn) Jang	0.0400
6	Hanqin Qiu Zhang	20	Billy Bai	0.1617	Billy Bai	0.0280
7	Basak Denizci-Guillet	18	Haiyan Song	0.1594	Hanqin Qiu Zhang	0.0280
8	Heesup Han	16	Soocheong (Shawn) Jang	0.1575	Basak Denizci-Guillet	0.0280
9	Haiyan Song	15	Kaye Kye-Sung Chon	0.1552	Haiyan Song	0.0262
10	Samuel Seongseop Kim	14	Samuel Seongseop Kim	0.1538	Nan Hua	0.0205
11	Yong-Ki Lee	14	Ming-Hsiang Chen	0.1531	Alison Jane Mcintosh	0.0204
12	Li Miao	14	Cindy Yoonjoung Heo	0.1529	Fevzi Okumus	0.0201
13	Jinsoo Hwang	13	Deniz Kucukusta	0.1528	Choong-Ki Lee	0.0180
14	Cathy H.C. Hsu	13	Choong-Ki Lee	0.1520	Mark A. Bonn	0.0175
15	Wai-Hung Wilco Chan	12	Li Miao	0.1513	Kaye Kye-Sung Chon	0.0174
16	Dennis Reynolds	12	Xinyuan (Roy) Zhao	0.1481	Yong-Ki Lee	0.0163
17	Mark A. Bonn	12	Nan Hua	0.1481	Cathy H.C. Hsu	0.0163
18	Xinran You Lehto	12	Kwanglim Seo	0.1447	Heesup Han	0.0143
19	Sunghyup Sean Hyun	12	Jong-Hyeong Kim	0.1445	Cihan Cobanoglu	0.0142
20	Fevzi Okumus	12	Lydia E. Hanks	0.1438	Priyanko Guchait	0.0137
21	Lydia E. Hanks	11	Heesup Han	0.1435	Cindy Yoonjoung Heo	0.0129
22	Kam Hung	11	Bob Mckercher	0.1431	Samuel Seongseop Kim	0.0129
23	Choong-Ki Lee	11	Hyewon Youn	0.1428	Manisha Singal	0.0124
24	Priyanko Guchait	11	David Allen Cranage	0.1427	Dogan Gursoy	0.0119
25	Xinyuan (Roy) Zhao	10	John W. O'Neill	0.1425	Edwin N. Torres	0.0117
26	Hyun Jeong Kim	10	Sean P. Mcginley	0.1425	Li Miao	0.0114
27	Juhee Kang	10	Priyanko Guchait	0.1424	Carola Raab	0.0113
28	Barbara A. Almanza	10	Manisha Singal	0.1422	Juhee Kang	0.0111
29	Chiang-Ming Chen	10	Cathy H.C. Hsu	0.1420	Kyung-A Sun	0.0104
30	Hui Fu	10	Arun Upneja	0.1420	Lorenzo Masiero	0.0104
31	Amit Sharma	10				

**Table 5. Cliques in the Network (1960-2016)**

No	Authors
1	Basak Denizci-Guillet, Rob Law, Kam Hung, Liang Wang, Davis Ka Chio Fong
2	Rob Law, Haiyan Song, Cathy H.C. Hsu, Karin Weber, Bob Mckercher
3	Soocheong (Shawn) Jang, Soobin Seo, Barbara A. Almanza, Li Miao, Carl Behnke
4	Alice H.Y. Hon, Wai-Hung Wilco Chan, Danny Li, Leon Liu, Shun-Cheng Lee, Ningyi Zhu
5	John W. O'neill, Anna S. Mattila, Lydia E. Hanks, Lu Zhang, Sean P. Mcginley
6	Woo Gon Kim, Robert A. Brymer, Alex M. Susskind, Sean A. Way, Hae Young Lee
7	Jeou-Shyan Horng, Chang-Yen Tsai, Da-Chian Hu, Ting Chi Yang, Chih Hsing Liu
8	Dennis Reynolds, Tanya Ruetzler, Jim Taylor, William Baker, Brian Allen
9	Haiyan Song, Songshan (Sam) Huang ,Hui Fu, Jinhong Gong, Doris Chenguang Wu
10	Yong-Ki Lee, Yongsook Nor, Sally Kim, Sangho Han, Jae-Han Lee, Juwon Choi
11	Richard N.S. Robinson, David J. Solnet, Victor J. Callan, Anna Kralj, Edmund Goh
12	Amit Sharma, Jeong-Gil Choi, Kwanglim Seo, Javid I. Baig, Joonho Moon, Lorna C. Donatone
13	Ricard Rigall-I-Torrent, Mar Vila, Modest Fluvia, Anna Garriga, Albert Salo
14	Nathalie Guibert, William Proud, Sandra Maria Correia Loureiro, Silvia Cacho-Elizondo, Constanza Bianchi, Judy Drennan
15	Mladen Knezevic, Dasa Fabjan, Dragica Tomka, Stasa Kukulj, Bostjan Bizjak
16	Cheul Rhee, Dongwoo Cho, Jongpyo Cho, Dongmin Lee, Junghoon Moon
17	Fang Meng, Kevin D. O'gorman, Babak Taheri, Alireza Golmohammadi, Behrouz Jahandideh



**Table 6. Core Authors in the co-authorship network of hospitality management research (1960-2016)**

<b>Core Author</b>	<b>University</b>	<b>Country/Region</b>
Basak Denizci-Guillet	Hong Kong Polytechnic University	Hong Kong
Rob Law	Hong Kong Polytechnic University	Hong Kong
Soocheong (Shawn) Jang	Purdue University	USA
John W. O'Neill	The Pennsylvania State University	USA
Anna S. Mattila	The Pennsylvania State University	USA
Seoki Lee	The Pennsylvania State University	USA
Ming-Hsiang Chen	Washington State University	USA
Woo Gon Kim	Florida State University	USA
Haiyan Kong	Shandong University	China
Catherine Cheung	Hong Kong Polytechnic University	Hong Kong
Xinyuan (Roy) Zhao	Sun Yat-sen University	China
Cindy Yoonjoung Heo	University of Applied Sciences	Switzerland
Haiyan Song	Hong Kong Polytechnic University	Hong Kong
Deniz Kucukusta	Hong Kong Polytechnic University	Hong Kong
Lydia E. Hanks	Florida State University	USA
Cathy H.C. Hsu	Hong Kong Polytechnic University	Hong Kong
Karin Weber	Hong Kong Polytechnic University	Hong Kong
Samuel Seongseop Kim	Hong Kong Polytechnic University	Hong Kong
Kam Hung	Hong Kong Polytechnic University	Hong Kong
Liang Wang	Hong Kong Polytechnic University	Hong Kong
Lu Zhang	Michigan State University	USA
Kaye Kye-Sung Chon	Hong Kong Polytechnic University	Hong Kong
Li Miao	Oklahoma State University	USA
Hanqin Qiu Zhang	Hong Kong Polytechnic University	Hong Kong
Sean P. Mcginley	The Pennsylvania State University	USA
Hui Fu	Sun Yat-sen University	China
Davis Ka Chio Fong	University of Macau	Macau
Billy Bai	University of Nevada	USA
Ben Haobin Ye	Sun Yat-sen University	China
David Allen Cranage	The Pennsylvania State University	USA
Markus Schuckert	Hong Kong Polytechnic University	Hong Kong
Bob Mckercher	Hong Kong Polytechnic University	Hong Kong
Kwanglim Seo	University of Hawaii	USA

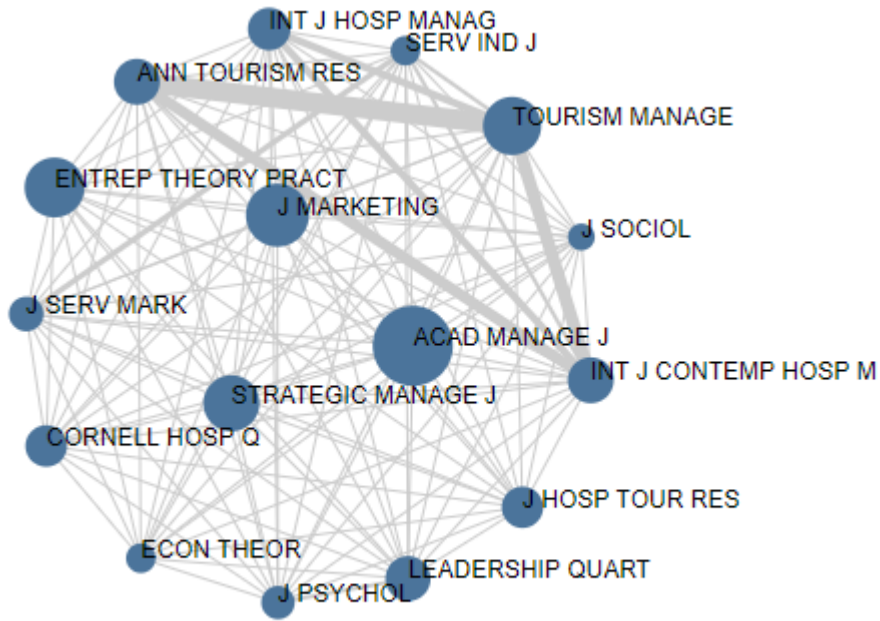


Figure 1. Co-citation networks of hospitality journals indexed in SSCI with other mainstream journals in 2016

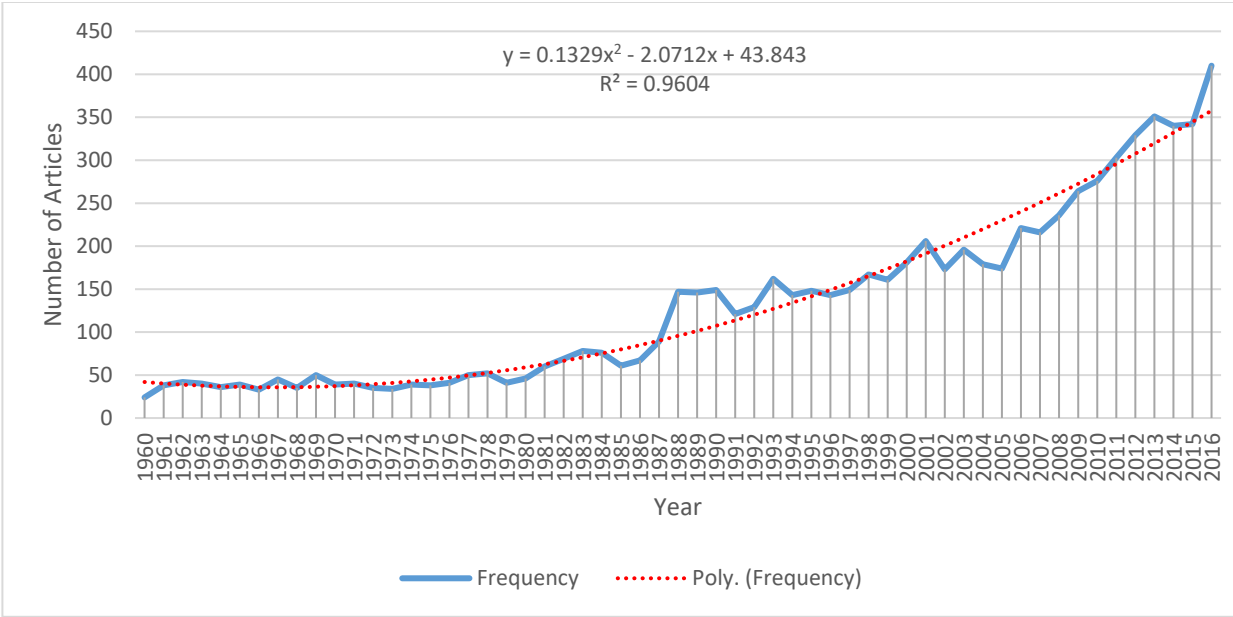
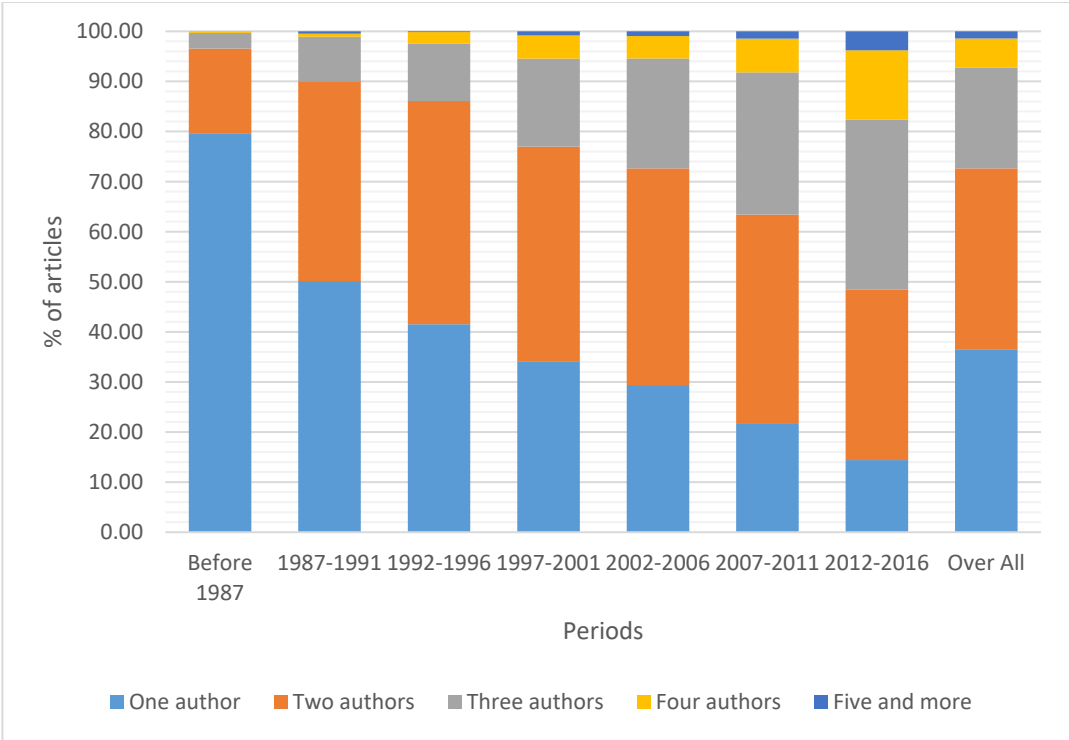
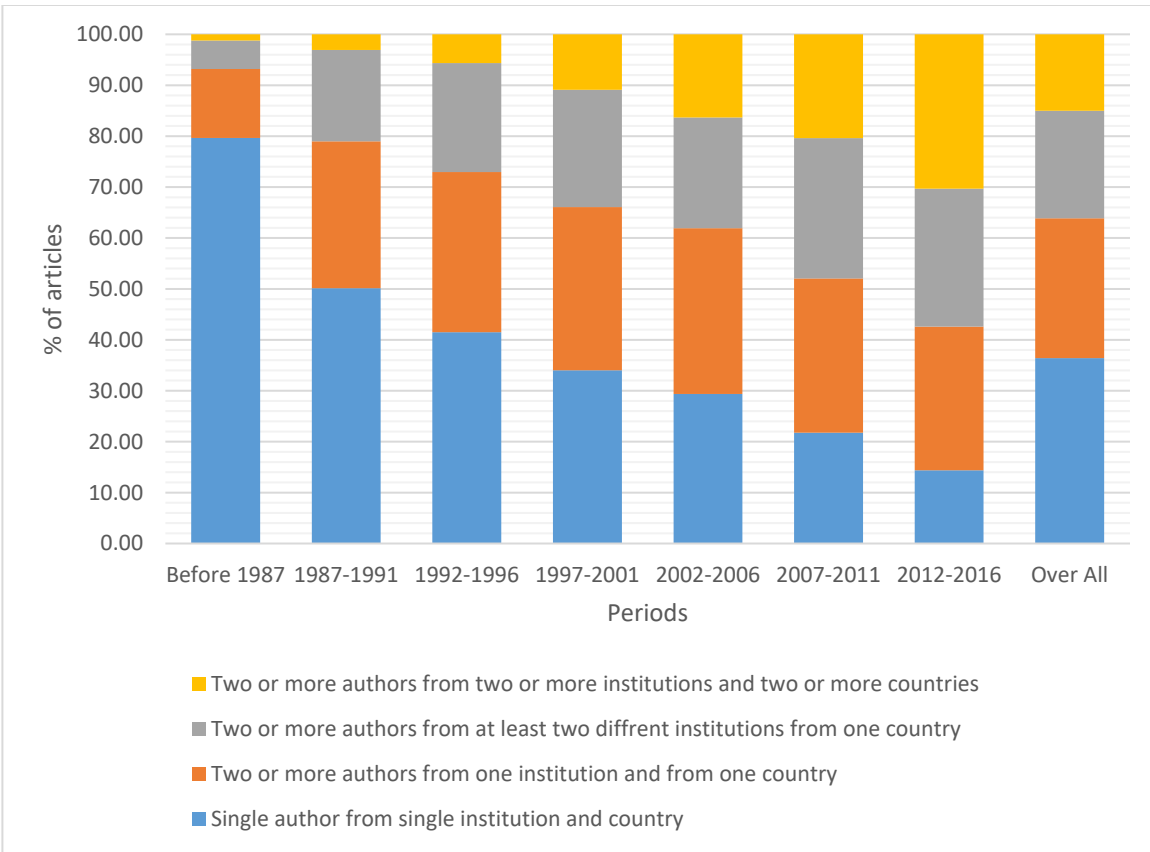


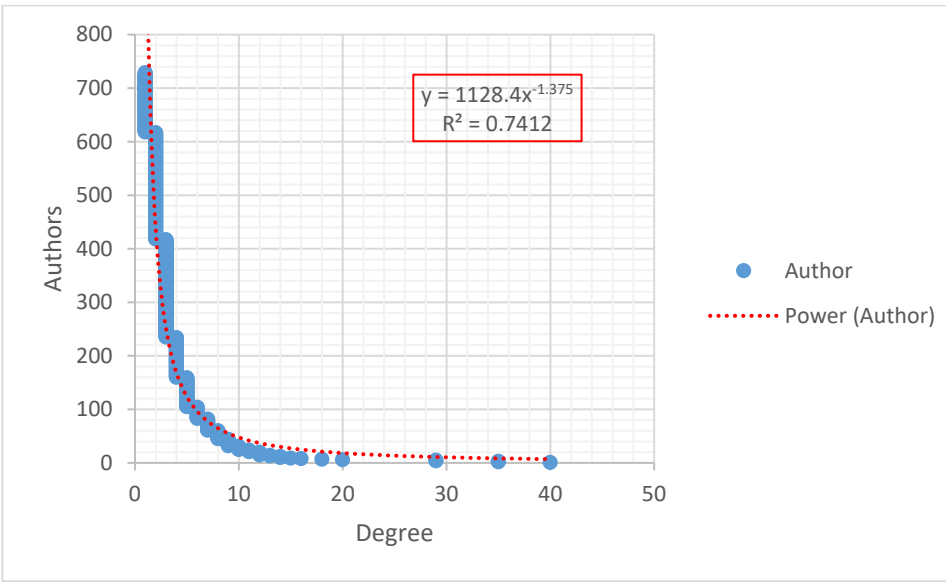
Figure 2. Article numbers by year



**Figure 3. Authorship pattern by year**



**Figure 4. International collaboration by period**



**Figure 5. Degree Distribution of Hospitality Management Studies Network**

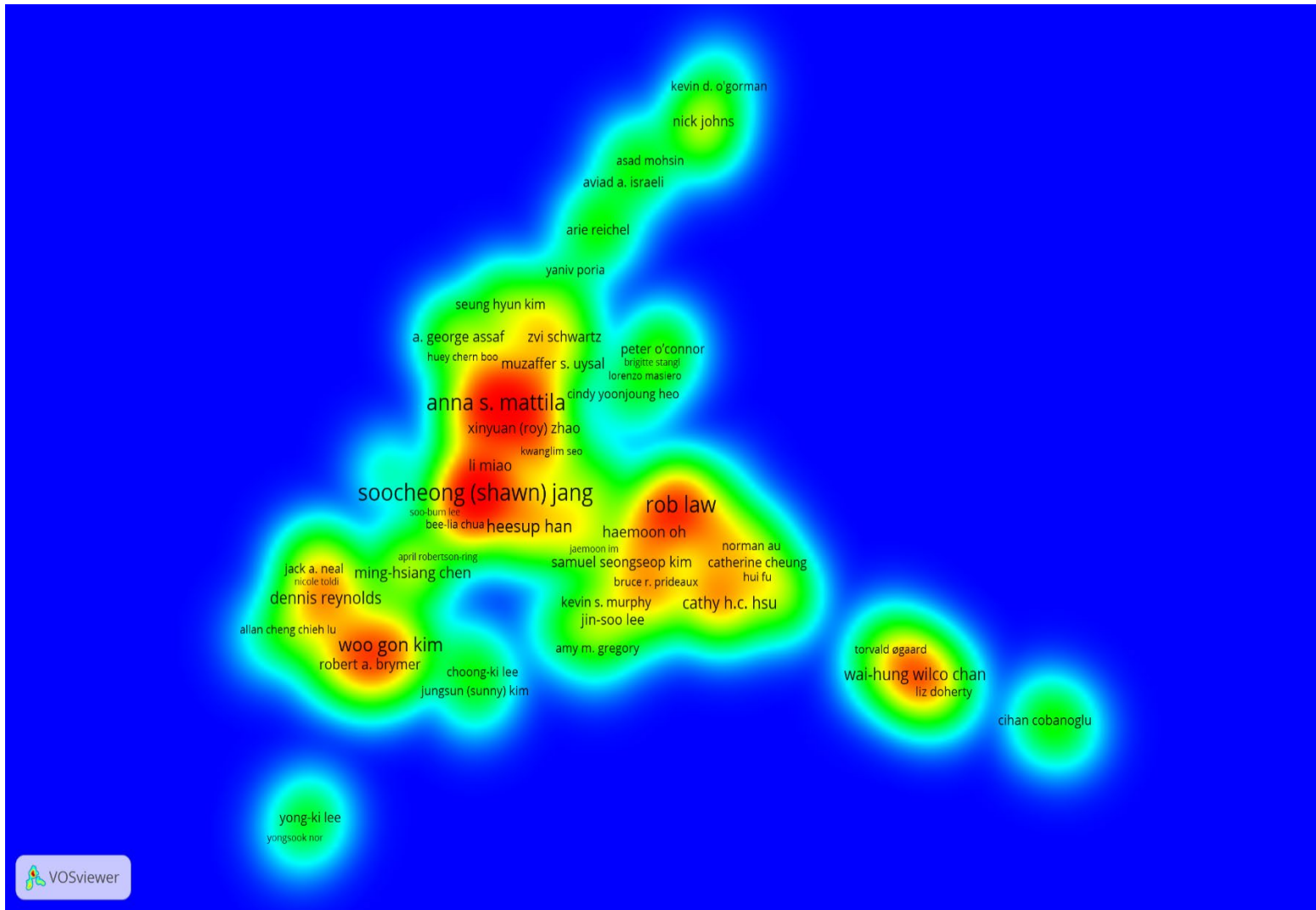


Figure 6. Visualization of largest component in the overall network (1960-2016)