

## **Chinese contributions to hospitality research: Patterns of authorship and collaborations**

### **ABSTRACT**

The burgeoning Chinese language tourism literature by China-based contributors has been accompanied by increasing publications in English-language journals by Chinese authors based both within and outside the country and is well documented. However, Chinese contributions to international hospitality research have not been adequately quantified and evaluated, including those leading to the formation of networks. The current study examines China-affiliated authorship networks and collaboration patterns in seven top-tier English-language hospitality journals. The authors analyze the evolution of such networks and patterns over a thirty-year period, using a bibliometric approach. The article contributes to discussion about culture/ethnic contributions to the progressive internationalization of hospitality research. Limitations and future avenues of research are discussed.

**Keywords:** hospitality research; network analysis; co-authorship; China

## **INTRODUCTION**

In this study, the authors examine co-authorships, institutions, and regions to explain evolving patterns in China-affiliated hospitality research through the period of China's increased engagement with the rest of the world. The present era of globalization and the knowledge-based economy has led to intense competition over the creation and dissemination of scientific insights across diverse disciplines and fields between countries, research institutions and scholars. The Chinese economy has grown to rival the United States as the long established and dominant superpower, and this provides important context for understanding the increasing role of research by Chinese institutions and authors. The contested role of intellectual property and of spheres of influence has coincided with trade tensions between China and the USA. One early manifestation of such competition is authorship of the most influential papers, commonly measured as publications in highly reputed international journals. The medium for such research is overwhelmingly English language based and depends on a small group of global publishers based in the developed world (typically Europe and North America). In the context of hospitality and tourism, the hierarchical system places a small number of Social Science Citations Index (SSCI) listed publications at the apex of prestige and recognition for policymakers and administrators within academic institutions.

One medium for generating high-quality and publishable research is by establishing collaborative relationships and co-authorships with other experts (Bozeman & Corley, 2004; Victor et al., 2016). A combination of complementary competencies can help to overcome the challenges of securing publication in top international journals. Such collaborations generate scholarly impact by creating knowledge networks within a research community (Koseoglu, 2016a; Koseoglu et al., 2016a; Koseoglu et al., 2016b). Research collaborations have already

been examined extensively in the respective hospitality and tourism literatures (Jogarathnam et al., 2005; McKercher, 2007; Roberts, 1998; Ye et al., 2013; Youn et al., 2011; Zhao & Ritchie, 2007). These have included thematic analyses or reviews of methodological progress from a regional/geographical and/or cultural-linguistic perspective. For instance, Benckendorff (2010) identified the collaboration patterns of Australian and New Zealand authors and institutions in 18 tourism research journals. Other studies have assessed the co-authorship or collaboration patterns of Chinese contributors to the tourism domain (Sun et al., 2017; Zhang, 2015; Zhang et al., 2017). A few studies have examined the authorship structure of tourism and hospitality research in or on China (Law et al., 2014; Tsang & Hsu, 2011; Zhong et al., 2015). However, the previous investigations have only provided a partial viewpoint, due to issues such as sample selection, time span covered, and the coverage of tourism and hospitality as an undifferentiated field. Consequently, these studies have not examined how China may become a top player in hospitality research from a policy maker perspective. In addressing this issue, the authors shed light on collaborative patterns of knowledge production by China, including distinct cultural groups across the international hospitality research community, noting the increasing multiculturalism and internationalization of hospitality and tourism research (Pearce, 2014). Such a focused study can help to explain the positioning and maturity level of collaboration networks and may support the formulation of collaboration strategies.

To identify the collaboration networks, the authors conducted a bibliometric analysis. This study focuses on hospitality research by contributors from China affiliated institutions, including the four distinct regions of Mainland China (ML), Hong Kong (HK), Macao (MA), and Taiwan (TA). These are home to many hospitality programs and institutions (Law et al., 2014), and are major contributors to hospitality and tourism research (Park et al., 2011). Hence,

to identify strategies for China-related contributions to hospitality research, the study (1) outlines the evolution of authorships by sub-periods and regions, (2) determines critical researchers in the co-authorship networks, including by sub-periods, and (3) explores the evolution of collaborations at individual (researcher), meso (institutional), and macro (country) levels by sub-periods and regions.

This paper consists of four sections. The first is an overview and review of China related collaborations in hospitality research. Then, the authors describe the method of bibliometric analysis and the applicable procedures. The third (results) section details the authorship trends and collaboration networks. Finally, the authors discuss knowledge networks in hospitality research, acknowledge study limitations, and suggest future research opportunities.

## **LITERATURE REVIEW**

### **Collaborations in scientific research**

The authorship and publication of scientific articles is an essential element of career development for researchers (Chen, 2011; Harzing, 2007). However, submissions to top journals encounter high rejection rates (Serra et al., 2008), prompting the view that scholars should overcome such challenges by engaging in co-authorships (Holder et al., 2000). Previous contributors have noted a correlation is evident between research collaborations and productivity (Ferreira & Serra, 2015; Katz & Martin, 1997; Lee & Bozeman, 2005). In the context of pressure for scholars to publish well and to publish frequently, it is evident that building co-authorship networks (Acedo et al., 2006) may help to address the hazards of academic publishing (Judge et al., 2007).

There are several reasons for researchers to develop co-authorship ties (Ferreira & Serra, 2015). These include for technical reasons, such as combining individual efforts to reduce the preparation times for a paper for submission and publication (Hemmings et al., 2006). Co-authors may also bring complementary knowledge or skills to the partnership (Acedo et al., 2006), either theoretical or statistical. Such complementarity is especially relevant because a sharing and combining of different perspectives is often a necessity for significant knowledge breakthroughs (Goffman & Warren, 1980; Lee & Bozeman, 2005).

Co-authorship can serve several purposes. Collaborating with more experienced and prestigious scholars can enhance visibility and recognition (Olmeda-Gómez et al., 2009). For fresh doctoral graduates or less experienced scholars, co-authorships may provide complementary knowledge, such as navigating the editorial process or acquiring tacit knowledge about the academic publishing process (Hudson, 1996; Lee & Bozeman, 2005; Manton & English, 2006). Hence, countries that are seeking to lead academic research communities, should formulate and implement collaboration strategies for research. A commonly adopted practice has been for emerging/developing countries to encourage their (often non-native English speaking) researchers to collaborate with researchers from developed countries (English speakers).

### **Hospitality research by Chinese scholars**

The primary research topics which have characterized the various reviews of progress in tourism and hospitality research on (or in) China fall into three main categories, namely: 1) tourism-focused studies (Sun et al., 2017; Wu et al., 2001; Wu & Wall, 2016; Yang & Brunt, 2011; Zhang & Lu, 2004; Zhang, 2002; Zhang, 2015; Zhang et al., 2017; Zhao, 2000; Zhu and Liu, 2004), 2) hospitality-focused studies (Law et al., 2014; Weaver, 1990), and 3) hospitality and tourism-focused studies (Huang & Hsu, 2008; Tsang & Hsu, 2011; Xie, 2003). Many of these

papers have undertaken content analyses, reviewing Chinese hospitality and tourism research by the themes addressed, methods employed and contributors or authorship at the individual, institutional, and country levels.

Zhang (2015) identified collaboration patterns in tourism research in China and about the growth of collaborations over the previous decade. Zhong et al. (2015) examined the authorship of 333 articles related to China's tourism from 96 English-language academic journals published during the period 1978 - 2012. They determined that three authorship networks published most of the China-related tourism research and that most of the authors were from Mainland China, the United States of America (USA), and/or from Hong Kong. Law et al. (2014) examined the progress in Chinese hotel research published in SSCI listed journals. Based on 93 articles, four of the most active institutions were in Greater China: Sun Yat-Sen University (China) and the Hong Kong Polytechnic University, City University of Hong Kong and Chinese University of Hong Kong (China-HK). Another three were outside China, namely: Oklahoma State University and Cornell University (USA) and Griffith University (Australia). Finally, Tsang and Hsu (2011) investigated authorships in tourism and hospitality research related to China published between 1978 and 2008 in six leading English-language academic journals. Based on 119 articles, they identified a tendency toward multiple, rather than single authorships. This is in line with international patterns.

Although previous studies (Sun et al., 2017; Zhang, 2015; Zhong et al., 2015) have deployed network analyses to examine collaborative research, they focused exclusively on a snapshot of tourism research that has been generated in and about China, rather than exploring how the applicable hospitality research networks have evolved. To date, there has been no substantive insight into the major Chinese contributions to hospitality research, and how patterns

of research collaboration have evolved across this distinct community, thereby giving momentum to Chinese hospitality research contributions. The present study fills this gap by deploying co-authorship analysis on research in hospitality management journals that is China affiliated.

## **METHOD**

### **Data collection procedures**

The authors adopted four procedures for the collection of data. Firstly, they selected target journals for the bibliometric analysis from which the sample of articles would be drawn. They chose journals listed in the Social Science Citation Index (SSCI) and Emerging Sources Citation Index (ESCI). Gursoy and Sandstrom's (2016) updated ranking provided an additional point of reference. Journals were selected on the basis of their higher impact factors (SCR-Scopus, 2017; *Journal of Citation Report*, 2017) and/or higher reputation among researchers (Gursoy & Sandstrom, 2016). This prompted identification of the following seven hospitality journals: *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)*.

Table 1 provides information about the seven journals. Four are relatively new, having been founded in the 1990s or more recently. Of the longer established publications, *CHQ* was founded in 1960, *JHTR* in 1976, and *IJCHM* in 1989. *IJHM* has published the largest number of articles (404 articles) that are affiliated with Chinese universities, and is also responsible for the

highest percentage of the total of 901 hospitality articles that are affiliated with Chinese universities (23.6%).

Of the 7,499 articles published in the seven journals, 901 (or 12%) were (co-)authored by scholars affiliated with Chinese universities. It is worth noting that China affiliated articles have increased steadily from 0.47% (9 articles) in the first period to 26.75% (474 articles) in the last period. The number of published articles more than doubled from 2007–2011 (228 articles) to 2012–2016 (474 articles). This is evidence of the growing influence of Chinese scholars in hospitality research. It is likely to reflect both the magnitude of Chinese hospitality education and research, and the activities and quality of work of the Chinese scholarly community. It is also worth noting that the orientation, scope, and policy of a journal related to attracting and publishing manuscripts may also influence the rise and fall of submissions from (and published articles affiliated with) a specific cultural/linguistic community such as Chinese.

[Insert TABLE 1 here]

The second procedure involved a narrowing down to full-length articles and research notes published in these seven journals by authors affiliated with Chinese universities. The articles were filtered by authors affiliated to Mainland China, Hong Kong, Macao, and Taiwan. This procedure yielded a sample of 901 articles. Third, the authors manually extracted bibliometric data from the sampled articles, such as the names of all (co-)authors and their affiliations. The final procedure involved organizing and cleaning the data for further analysis. This entailed manually inputting author names and affiliations in an Excel spreadsheet and checking for misspellings or repetitions that might have occurred when compiling the database. Problem issues were resolved, such as different author name combinations (Kumar & Jan, 2013).



Time periods were established to examine and display the data for easier visualization, and to facilitate an examination of network evolution and changes in the collaboration patterns.

### **Analysis procedures**

The authors used the SPSS, Bibexcel, Pajek, and VOSviewer network analysis software packages to analyze the data. While SPSS was deployed for cross tabulations and to calculate frequencies, Bibexcel was preferred to identify co-authorships with a view to building networks that show collaborations among actors in the relevant articles. To display the data visually, VOSviewer software was used to generate heat maps (van Eck & Waltman, 2010), which utilize “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 & Čater, 2015).

Six sub-periods were established as an alternative to scrutinizing annual data following the practice of Ramos-Rodríguez and Ruíz-Navarro (2004). These were: before 1992, 1992–1996, 1997–2001, 2002–2006, 2007–2011, and 2012–2016. While somewhat arbitrary, these period breaks permit better data visualization and helped to identify trends and patterns in the literature between 1960 and 2016.

## **RESULTS**

### **Micro (individual) level analysis**

The authorship characteristics of the relevant articles are summarized in Table 2. This includes frequency counts and averages of the number of authors, the ratio of articles per author, the ratio

of authors per article, the number of multi-authored articles, and the number of authors of multi-authored articles. A collaboration index is also presented.

[ Insert TABLE 2 here]

Adopting an historical view of the data can help to determine and understand collaboration patterns over time. It is revealed that there has been a substantial increase in the number of author appearances (from 42 to 1,309) since the second period (1992–1996) and that the number of authors has risen from 33 to 724. The ratio of articles per author (total articles/number of authors) rose from 0.58 to 0.77, and the authors per article (i.e., the co-authorship) varied between 1.40 and 1.74 across the periods. A collaboration index was calculated by dividing the total number of authors of multi-authored articles by the total number of multi-authored articles, to show how many collaborators, on average, work on a given paper (Elango & Rajendran, 2012). This index varies between 1.42 and 2.4 across the various periods, with a total-period average of 1.43. It is worth noticing that most papers were co-authored, though these are largely confined to a maximum of two co-authors. The trend towards multi-authored articles has been observed in several disciplines, including Strategic Management (Phelan et al., 2002).

Multi-authored papers are presented in Figure 1, based on the number of authors per article. Co-authored papers prevail, with many having two or three authors. The number of four-authored articles increased recently (2012–2016) over previous periods. The increasing trend toward multi-authorship has various implications for hospitality research and scholarship. On the one hand, multi-authorship may indicate a capitalizing on collaborator strengths by researchers in seeking to produce the highest quality of research. On the other hand, multi-authorship could

reflect the pressure to achieve higher outputs, as scholars in tourism and hospitality schools have faced significant pressure to publish in refereed journals (Shani & Uriely, 2017).

[Insert FIGURE 1 here]

Table 3 presents a ranking of prolific authors in hospitality management research by Chinese institutions, from both within and outside of China. The most prolific China-affiliated author in hospitality was Law (91 appearances), followed by Chan (31), Denizci-Guillet (28), Hsu (24), and Zhang (23). The most collaborative authors outside China with authors who worked with contributors from China were Mattila and Qu (12 appearances each), followed by Jang (10), Lee (9), and Kim (9). Many of the more prolific authors from China collaborate with authors of Asian origin who are affiliated with universities in Western countries. There have been limited collaborations between China-based and non-Asian authors from Western universities, perhaps because of mentor-mentee hospitality collaborations and the growing globalization of hospitality careers for PhD holders.

[ Insert TABLE 3 here]

### **Visualizing co-authorship networks**

The researchers focused on the largest component of the co-authorship network in order to identify critical authors in the co-authorship network. A component in a network includes authors directly or indirectly interconnected to each other (González-Teruel et al., 2015). The largest component holds the most authors that are directly and indirectly interconnected in the network. This component is both extensive and intimate (Ye et al., 2013), and usually contains the most prolific researchers (Kretschmer, 2004). Based on the heat maps of the first four periods, it may be concluded that a few authors from outside China occupy important positions

in the co-authorship network. However, authors from China collaborated with each other more frequently in the last two periods and overall, particularly in the case of The Hong Kong Polytechnic University (Figure 2). This finding suggests that the network ties are not strong between authors from China and other countries and that the co-authorship network has become more domestic, rather than international, and more centered within single Universities and with fewer inter-organizational ties to others. It is possible that this reflects a relative strength of the relevant School at The Hong-Kong Polytechnic University.

[ Insert FIGURE 2 here]

### **Meso (institutional) level analysis**

To undertake an analysis at the meso, or institutional level involves examining the publications record of scholars affiliated with specific universities within and beyond China, focusing particularly on those that generate the greatest outputs. Table 4 presents the publication frequencies; or, how many published articles were affiliated with a given institution.

The Hong Kong Polytechnic University has provided a considerable contribution to the field, with 746 appearances in 454 articles that account for over half of all articles published by the various universities across China. The most prolific collaborator university was Purdue University (31 appearances), followed by Pennsylvania State University (25), Virginia Tech (19), and Oklahoma State University (18). These universities are listed in the 50 top tourism and hospitality universities in the QS ranking (*The Guardian*, 2017). The involvement of the three is an indicator of potentially high quality for these collaborations.

[ Insert TABLE 4 here]

Based on the visualization of the evolution of the largest component of the institutional collaboration networks, The Hong Kong Polytechnic University has evidently occupied the most critical position through all periods. Universities from Western countries held critical positions in the network at the beginning, though these had been largely lost by the last period, at least in relative terms. As is evident in the co-authorship networks (Figure 3), the ties amongst institutions from China and Western countries are weak, and US universities prevail over European ones. This may indicate that Chinese scholars are returning to China after completing their doctoral degrees overseas. This may have been accelerated by the Thousand Talents Program which was established by the central government of China in 2008 to recognize and recruit leading international experts in scientific research, innovation, and entrepreneurship. It was intended to strengthen innovation and international competitiveness within China and has been praised its success in recruiting top talent to China.

[Insert FIGURE 3 here]

### **Macro (country/region) level analysis**

The countries that are most prolific and most prone to collaboration are presented in Table 5. The number of articles involving other countries/regions is identified. Hong Kong is the most prolific region with 891 appearances in 515 articles, followed by Taiwan, Mainland China, and Macao. Since Hong Kong is home to productive and world-leading hospitality institutions, with English as the instructional language, its major contribution to leading international hospitality journals is unsurprising. This finding is consistent with previous studies (Tsang & Hsu, 2011; Zhang et al., 2017).

With 313 author appearances in 216 articles, US based scholars collaborate with the four regions of China most frequently and account for more articles than their counterparts in either Mainland China or Macao. Though hospitality collaborations with Chinese institutions extend to many countries, none are evident with South America. This, in a way, reflects the dominance or imbalance between world regions in the production of tourism knowledge in the English language medium, with South America having a stronger emphasis on languages other than English, namely Spanish and Portuguese. It is worth noting that the China Government has identified Macao as a bridge to building relationships between the Mainland and the Portuguese speaking world. Whilst the focus of this initiative is on infrastructure and investment, collaborative hospitality research may be advanced over time.

[ Insert TABLE 5 here]

The patterns of international and national collaboration that are responsible for the various journal outputs are presented in Figure 4. They form four groups, as follows: (1) single author from single institution and country/region, (2) two or more authors from one institution and one country/region, (3) two or more authors from at least two different institutions from one country/region, and (4) two or more authors from two or more institutions and two or more countries/regions. The identified patterns show the dominance of international collaborations among countries/regions in these articles. Notably, 61 articles were produced via collaborations between Mainland China and Hong Kong. Most were produced during the most recent period (2012–2016). Interestingly, collaborations among any three regions (Mainland China, Hong Kong, Macao and Taiwan) were rare and there were no articles involving authors from all four regions. This could be a result of the challenges or complications involving collaborative research from multiple regions or countries with their different approval systems.

It is worth noting that recent China government initiatives are likely to accelerate the formation of collaborations. The Greater Bay Area concept is already bringing together researchers and institutions from China's prosperous and populous Guangdong Province with their counterparts in the adjoining Special Administrative Regions (SARs) of Hong Kong and Macao. It is notable that China's highest ranked institution for hospitality and tourism research, namely Sun Yat Sen University has its campuses in Guangdong Province (Guangzhou and Zhuhai). Research collaborations extend to joint supervision of doctoral students between China, Macao and Hong Kong and to eligibility for Mainland China competitive research schemes for Macao and Hong Kong based research institutions. Other initiatives in hospitality teaching are stimulating collaborations between Mainland China, Taiwan, Macao and Hong Kong.

[ Insert FIGURE 4 here]

Collaborations between authors in Hong Kong and other jurisdictions, such as the USA, UK, and Australia began prior to 1992. Mainland China appeared within the network during the second period (1992–1996) and Taiwan and South Korea followed during the third period (1997–2001). New countries appeared in the fourth period (2002–2006), including New Zealand, and Cyprus, followed by Macao in the fifth period (Figure 5). In the last two periods, collaboration networks extended to countries from North America, Europe, and Asia. The USA occupies a central position in the overall network (Figure 5), with Hong Kong as a hub connecting many countries. Viewed historically, these collaborative patterns reflect the evolution of hospitality as a research field, with co-authorships during the early years tending to be between/amongst researchers in English-speaking countries. Researchers from different countries joined the network as the field evolved, with some countries/regions becoming particularly prominent.

[ Insert FIGURE 5 here]

To acquire a better understanding of international collaborations, we investigated how the numbers of international collaboration articles by distinct regions have evolved over the years. To conduct these analyses we counted international collaborations as a paper for each collaborating country or region (Figure 6). Based on our dataset, in 1986 the first international collaboration article was published by scholars from HK and UK. By the number of international collaboration articles by scholars from HK, remarkable increase was recorded to start from 2008 and continue onto 2013 (35 articles) before a slight decrease appeared. The first international collaboration article in mainland China appeared in 1995. The number of international collaboration articles by mainland scholars has remarkably increased since 2011, and has reached the peak in 2016 (28 articles). As can be seen in Figure 6, there have been no significant trends in the number of international collaboration papers by scholars from Macao and Taiwan.

[ Insert FIGURE 6 here]

## **DISCUSSION AND CONCLUDING REMARKS**

This study has investigated the growth of China's contribution to hospitality research, and how collaborations and authorship patterns have evolved by regions and sub-periods. It has shown how China has been making an increasing contribution to hospitality research. The authors examined (co)authorship patterns and the evolution of research collaborations at the individual, institutional, and country/regional levels over six consecutive periods, drawing upon publications between 1960 and 2016 in top hospitality journals. The research also identified prolific authors that have been central to the co-authorship networks through the various periods. The bibliometric analysis potentially contributes to understanding collaborative patterns within the distinct cultural group of hospitality researchers in the four different regions of China —



Mainland China, Hong Kong, Macao, and Taiwan — and adds to the discussion on internationalization in hospitality and tourism research (Pearce, 2014).

This sample of contributions to hospitality journals has provided evidence of a substantial number of international research collaborations. Nonetheless, collaborations amongst authors from different institutions in different regions remain modest. It is notable that researchers from China have predominantly collaborated with counterparts at well-reputed US institutions. This collaboration pattern is growing progressively stronger. The evolution and structure of hospitality research collaboration demonstrates some of the characteristics of center-periphery theory, where researchers from non-English-speaking countries or regions seek to follow or cooperate with those from English-speaking ones through engaging in collaborative research for top hospitality management journals. As has been indicated by Wagner and Leydesdorff (2005), joining hospitality research networks depends substantially on the professional appeal of the actors.

It is notable that researchers from China tend to collaborate with authors who are affiliated with Western universities that and are of Asian origin. Such collaborations may reflect cultural/ethnic connections, as well as mentor-mentee relationships such as those formed with former doctoral supervisors. Anecdotally, institutional partnerships and the common interests or goals that are defined by collaborative projects also lead to such co-authorship networks.

This study contributes to the hospitality literature in two major respects. First, it illuminates the growing Chinese involvement. China-affiliated authorships have, on average, claimed about 12% of the hospitality management research published in these top-tier journals over the six periods. The contributions during the most recent period (2012–2016), with 474 articles out of 901 articles, reaches almost 53%. Although there is an important increase in the

last period, the number of studies in production is relatively low. This likely relates to the barrier of communicating in English, and to the demanding criteria for publication in the relevant journals. Authors from Hong Kong, as one of the regions of China, contribute significantly to hospitality research. The Hong Kong region has an important knowledge stock in the field and is a critical agent of hospitality knowledge production in the world.

Second, the present study helps to determine the evolving patterns of hospitality collaboration and authorship. It is notable that many of the papers in each of the periods were authored by two researchers. Additionally, collaboration amongst the regions of China is rare, although there are funding opportunities to encourage collaboration between researchers from across the regions, notably in the case of the China Government's Greater Bay Area which connects Guangdong Province, Macao and Hong Kong. Though the developments will take longer, it is also worth mentioning the China Government's Belt and Road Initiative. Embracing the Silk Road Economic Belt and the 21st-century Maritime Silk Road this development strategy involves infrastructure development and investments in countries in Europe, Asia and Africa. Since the tourism and hospitality domain forms a link between the various participants, with China at the Apex, it is likely that collaborations will progressively appear in the main hospitality journals. It is notable that hospitality and tourism conferences have started to bring together Belt and Road hospitality scholars, with recent examples taking place in Almaty, Kazakhstan and in Palembang, Indonesia.

A small number of schools or locations evidently occupy critical positions related to China-affiliated hospitality research. This may generate problems for national knowledge creation and dissemination processes to allocate resources and gives rise to some new research questions: What are the barriers to collaboration among researchers from the regions? What

types of collaboration strategies should be developed? How do the different characteristics of disciplines or fields influence these types of collaboration? The improving quality of scholarly journals in Chinese language it is also worth mentioning. The imperative to access a potential readership across China's population of 1.4 billion may prompt the global publishing companies to contemplate the prospect of publishing in Chinese language. It is worth noting that Taylor and Francis, publisher of *Journal of China Tourism Research*, includes Chinese abstracts of all papers published.

**In terms of practical implications,** hospitality literature provides useful information to managers from hospitality or other related industries, researchers from related academic fields, and policy makers at institutional, national, and global levels. For example, findings of the study could help industry managers to identify scholars, advisors or institutions to work with on hospitality business of China and other countries. As indicated by Koseoglu (2016a), this type of studies could also inspire managers to conduct and publish hospitality research in the academic literature. This study offers benefits to the academic communities as well. For example, findings of the study could serve as a point of reference for graduate students or junior scholars who are looking for collaborative hospitality research in China, or looking for jobs related to the hospitality field (Koseoglu, 2016b). Senior or junior researchers may benefit from the findings of the study to find new collaborators from institutions in China. Additionally, journal editors may benefit from the findings of the study to invite new streams of research to contribute to the hospitality literature by promoting international collaborations. Finally, policy makers at the institutional, national, and global levels may benefit from this study to (re)design and improve their multidisciplinary research activities to promote hospitality research collaborations.

### **Limitations and future research**

This study has several limitations. First, regarding data, the sample of articles was collected from seven journals. Although these journals are leaders in hospitality, they do not include all of the relevant research. For instance, notable Chinese scholarly contributions to the hospitality literature have been published in business and management journals. Future investigators might expand their samples to provide a more comprehensive view of China's contribution to hospitality research. Additionally, a multidisciplinary perspective could complement the findings of the present analysis. It could be especially useful to identify how different disciplines are addressing this line of research in the Chinese context and perhaps make comparisons with the research that is being conducted in Europe and in the USA.

It is also worth noting that the data were split into six 5-year periods to articulate the evolution of authorship networks and collaboration patterns. However, the selection of these time intervals is somewhat arbitrary, and some possible bias might have influenced the interpretation of results. Consequently, future studies could explore other time frames or look at the data longitudinally (Koseoglu, 2016a). This is especially relevant for observing conceptual shifts through the evolutionary decades of hospitality research. The conduct of a longitudinal analysis could allow observations of any changes that have occurred over time to methodologies and research questions. Finally, interpreting the visualized networks is prone to subjectivity (Ramos-Rodríguez & Ruíz-Navarro, 2004).

There are additional avenues for future inquiry. First, it has previously been shown that scientific research collaborations influence both impact and quality (Katz & Martin, 1997). Thus, one opportunity for future research in an examination of how collaborations among researchers from Chinese institutions, and between researchers from Chinese and other institutions, have impacted the quality of published research and academic productivity (Molina et al., 2016). This

may help researchers and policymakers extend existing arrangements or identify new opportunities for effective collaborations.

Future studies could focus on the evolution of themes or subjects published in hospitality journals, on the methods or methodologies employed by authors, as well as the nature and types of sample that are used in empirical undertakings. These may explore the types of collaboration that are most beneficial for developing theoretical or empirical studies.

Future studies may also focus on the attributes of co-authorship networks to identify or strengthen collaborations. It is noted that the present study has only considered the largest component of the co-authorship network. Finally, the intellectual or contextual structure of published hospitality articles merits further inquiry. Researchers might undertake co-citation or co-word analyses to identify structures on the basis of types of collaboration: multi-authorship or sole authorship, national or international, male or female dominant, and first author characteristics. ▲

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**Table 1. Journals and sample**

<b>Selected Journals</b>	<b>Founding year</b>	<b>Impact Factor by SSCI</b>	<b>SCR Scopus</b>	<b># of articles published</b>	<b># of articles in the sample</b>	<b>% of articles affiliated by China</b>
Cornell Hospitality Quarterly (CHQ)	1960	2.657	1.996	2,430	78	3.21
International Journal of Contemporary Hospitality Management (IJCHM)	1989	3.196	1.745	1,199	192	16.01
International Journal of Hospitality Management (IJHM)	1997	2.787	1.956	1,710	404	23.63
International Journal of Hospitality and Tourism Administration (IJHTA)	1997	-	0.422	345	44	12.75
Journal of Hospitality Marketing & Management (JHMM)	1992	-	1.556	667	59	8.85
Journal of Hospitality and Tourism Management (JHTM)	2006	-	0.723	228	23	10.09
Journal of Hospitality and Tourism Research (JHTR)	1976	2.646	1.553	920	101	10.98
<b>TOTAL</b>				<b>7,499</b>	<b>901</b>	<b>12.01</b>

Note: Sample includes only articles by scholars from China.

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

<b>Periods</b>	<b>Before 1992</b>	<b>1992- 1996</b>	<b>1997- 2001</b>	<b>2002- 2006</b>	<b>2007- 2011</b>	<b>2012- 2016</b>	<b>Total</b>
# Articles	9	19	70	101	228	474	901
# of author appearances	17	42	159	235	555	1,309	2,311
# of unique authors	14	33	99	141	356	724	1,136
Articles per author	0.64	0.58	0.71	0.72	0.64	0.66	0.79
Authors per article	1.56	1.74	1.41	1.40	1.56	1.53	1.25
# Multi-authored articles	5	17	54	85	192	416	768
# Authors of multi- authored articles	12	32	94	140	340	706	1,100
Collaboration Index	2.4	1.88	1.74	1.63	1.77	1.69	1.43

**Table 3.** Prolific authors from China and outside of China

<b>From China</b>	<b># of appearances</b>	<b>Outside China</b>	<b># of appearances</b>
Rob Law	91	Anna S. Mattila	12
Wai-Hung Wilco Chan	31	Hailin Qu	12
Basak Denizci-Guillet	28	Soocheong (Shawn) Jang	10
Cathy H.C. Hsu	24	Seoki Lee	9
Hanqin Qiu Zhang	23	Woo Gon Kim	9
Alice H.Y. Hon	19	Songshan (Sam) Huang	8
Ming-Hsiang Chen	19	Chris Ryan	6
Jin-Soo Lee	18	Prakash K. Chathoth	6
Vincent C.S. Heung	17	Samuel Seongseop Kim	6
Eric Siu-Wa Chan	15	Dimitrios Buhalis	5
Terry Lam	15	Michael D. Olsen	5
Xinyuan (Roy) Zhao	15	Soo K. Kang	5
Catherine Cheung	14	Thomas A. Birtch	5
Ray Pine	14	Yang Yang	5
Karin Weber	13	Asli D. A. Tasci	4
Samuel Seongseop Kim	13	Beverley A. Sparks	4
Henry Tsai	12	Billy Bai	4
Kevin K.F. Wong	12	Catherine Prentice	4
Ip Kin Anthony Wong	11	Connie Mok	4
Jeou-Shyan Horng	11	Einar Marnburg	4
Qu Xiao	11	Gang Li	4
Sheng-Hshiung Tsaur	11	Giri Jogaratnam	4
Simon Chak-Keung Wong	11	Jinsoo Hwang	4
Chiang-Ming Chen	10	John W. O'neill	4
Eliza Ching-Yick Tse	10	Kara L. Wolfe	4
Haiyan Kong	10	Larry Yu	4
Haiyan Song	10	Li Miao	4
Nelson Kee-Fu Tsang	10	Liping A. Cai	4
Jakša Jack Kivela	9	Robert J. Inbakaran	4
Kam Hung	9	Taegoo (Terry) Kim	4
Norman Au	9		
Hsin-Hui (Sunny) Hu	8		
Mimi Li	8		

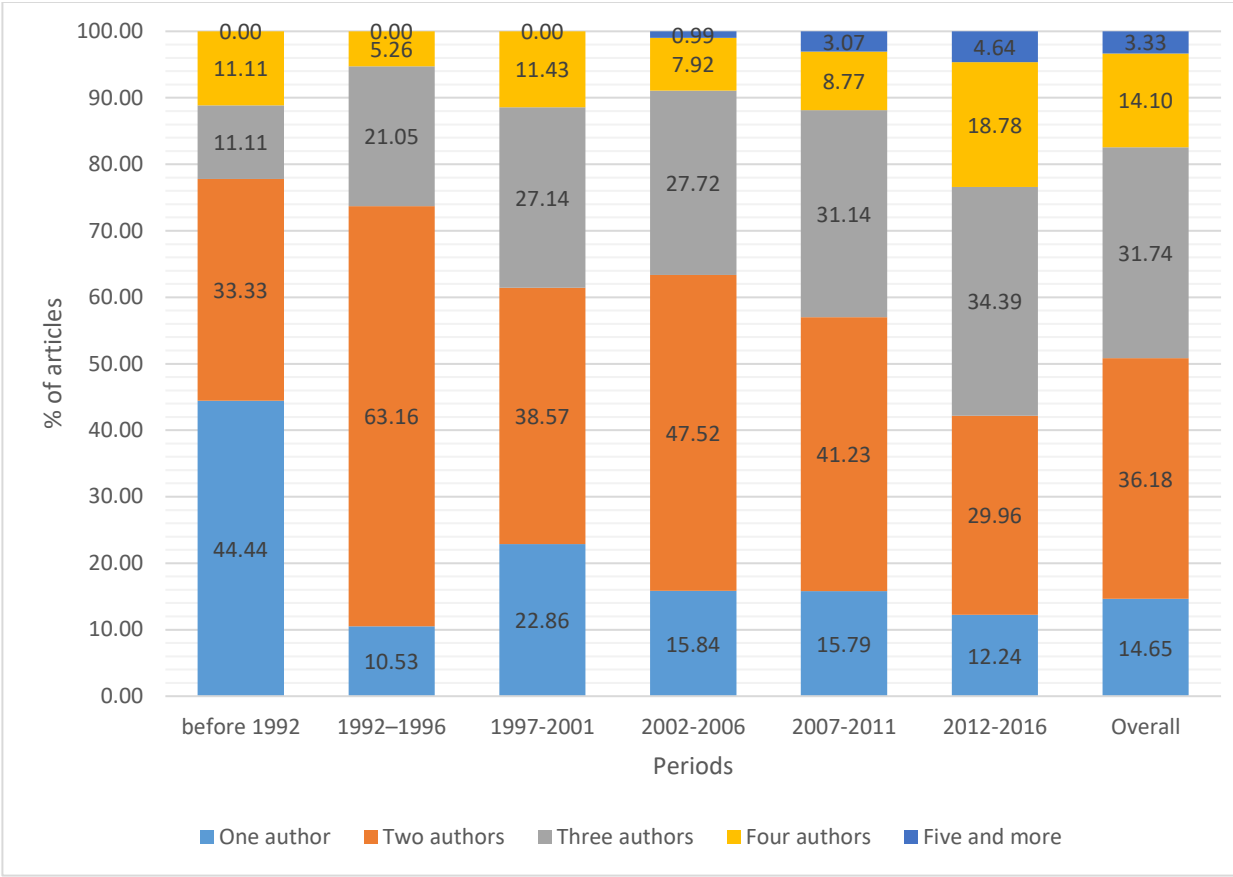
**Table 4.** Most prolific institutions from China and outside of China

<b>From China</b>	<b># of appearances</b>	<b># of articles</b>	<b>Outside of China</b>	<b># of appearances</b>	<b># of articles</b>
The Hong Kong Polytechnic University	746	454	Purdue University (USA)	31	23
The Chinese University of Hong Kong	67	44	The Pennsylvania State University (USA)	25	19
Sun Yat-sen University	65	53	Virginia Tech (USA)	19	12
Institute for Tourism Studies	39	35	Oklahoma State University (USA)	18	17
University of Macau	36	23	Sejong University	17	14
Ming Chuan University	32	22	University of Houston (USA)	14	12
National Chiayi University	26	21	University of Nevada (USA)	13	12
Hong Kong Baptist University	25	16	Griffith University	12	11
National Kaohsiung University of Hospitality and Tourism	25	19	Temple University (USA)	12	11
National Chung Cheng University	24	21	Washington State University (USA)	12	10
University of Science and Technology of China	22	8	Cornell University (USA)	11	11
National Chi Nan University	21	15	Kyung Hee University	11	7
National Chin-Yi University of Technology	20	14	University of Central Florida (USA)	11	11
Chinese Culture University	19	14	Deakin University	10	5
Harbin Institute of Technology	19	10	Oxford Brookes University	9	7
National Taiwan Normal University	19	14	Kansas State University (USA)	8	5
Macau University of Science and Technology	15	11	University of South Australia (Australia)	8	8
National Chiao Tung University	15	6	University of Surrey (UK)	8	5
Shandong University	15	12	Bournemouth University	7	7
Shih Chien University	15	9	Florida State University (USA)	7	6
Fu-Jen Catholic University	13	12	RMIT University	7	4
Tainan University of Technology	13	8	The University of Waikato	7	7
City University of Hong Kong	12	11	The George Washington University (USA)	6	5
Beijing International Studies University	10	9	University of Stavanger	6	4
De Lin Institute of Technology	10	9			
Jinan University	10	7			
JinWen University of Science and Technology	10	8			

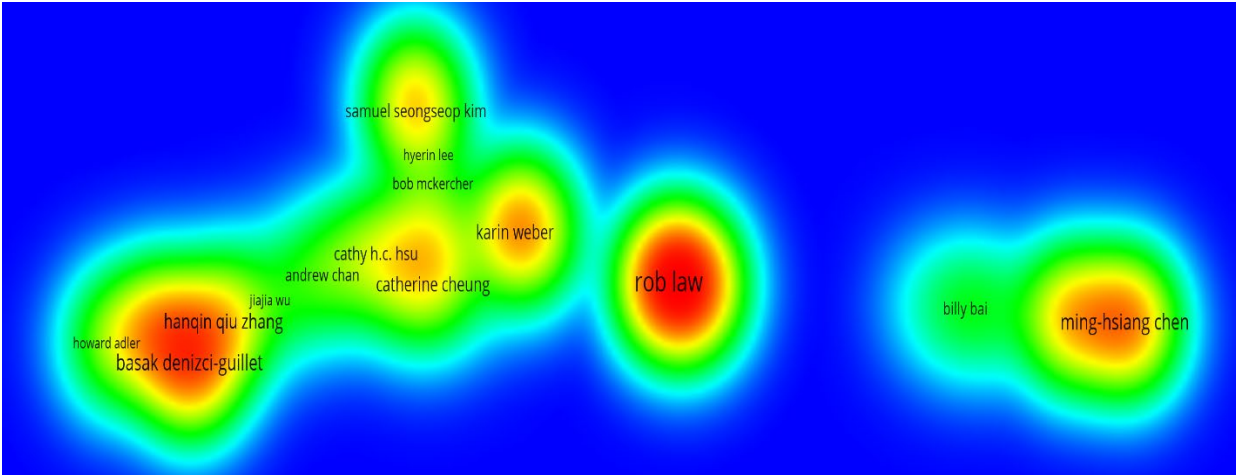
**Table 5.** Top collaborators by country/region

<b>Countries</b>	<b># of appearances</b>	<b># of articles</b>
Hong Kong	891	515
Taiwan	485	242
USA	313	216
Mainland China	290	173
Macao	102	66
Australia	62	50
UK	60	47
South Korea	54	34
New Zealand	9	9
Canada	6	6
Norway	6	4
United Arab Emirates	5	5
Switzerland	4	4
Austria	3	2
The Netherlands	3	2
France	2	1
India	2	1
Japan	2	2
Mauritius	2	2
Spain	2	2
Turkey	2	2

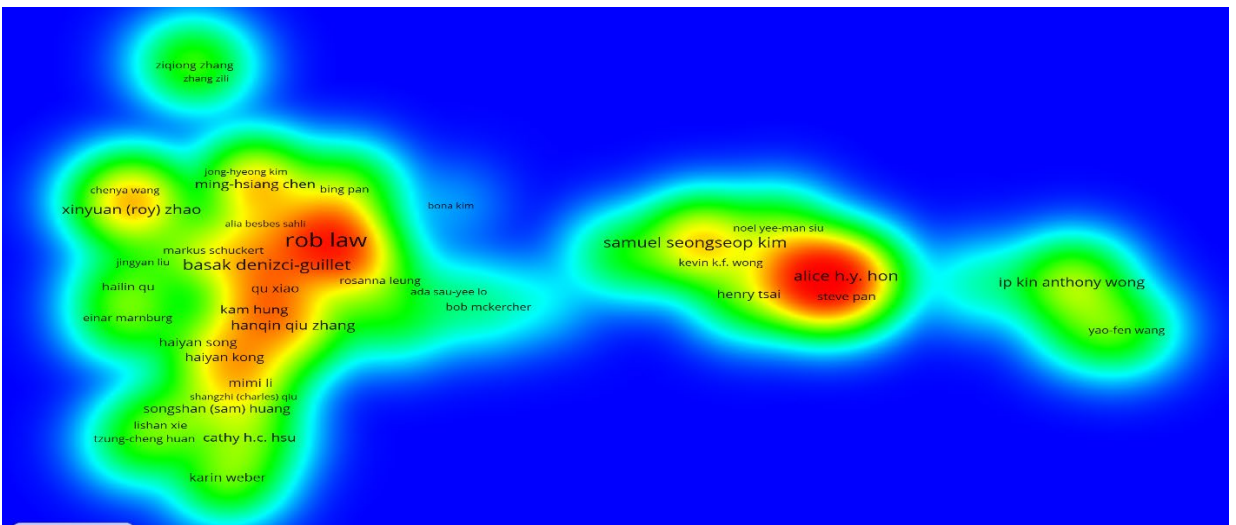




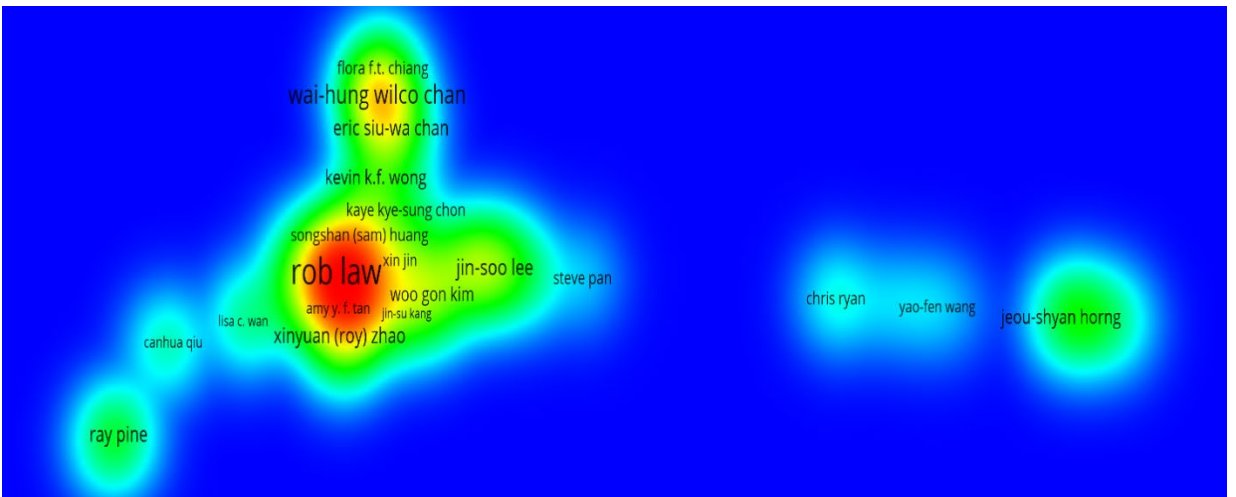
**Figure 1.** Authorship of articles by periods



2007-2011

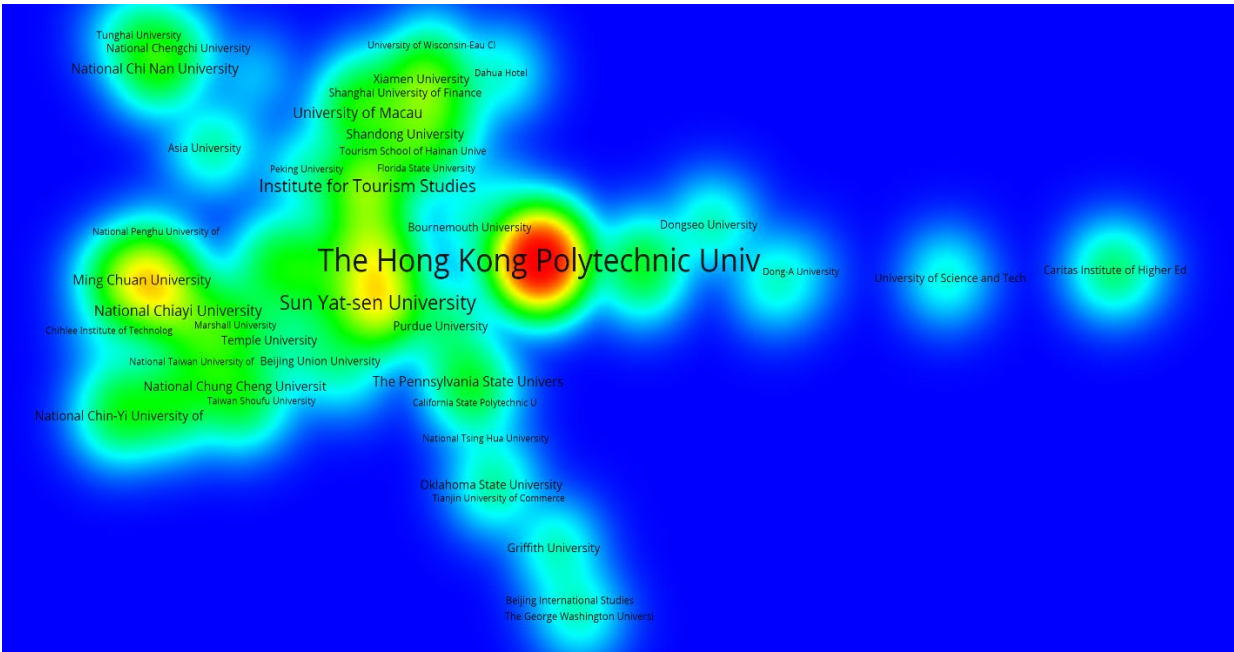


2012-2016

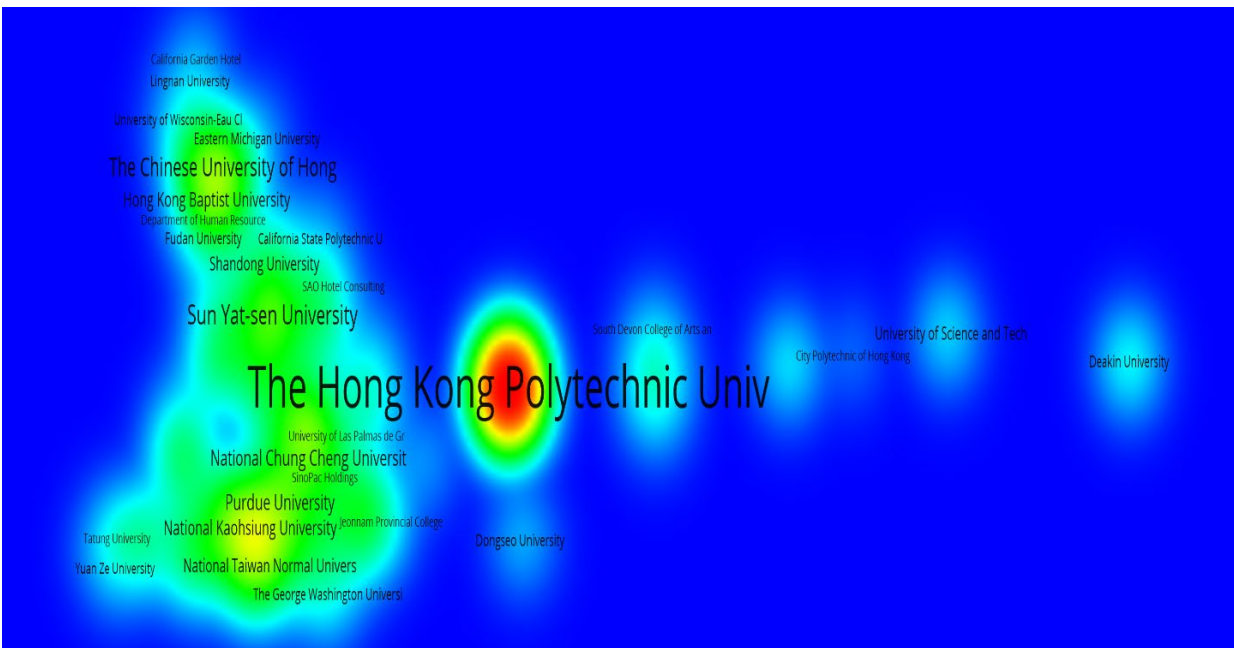


Overall

**Figure 2.** Visualization of critical authors in the largest component of the networks (last two periods and overall)

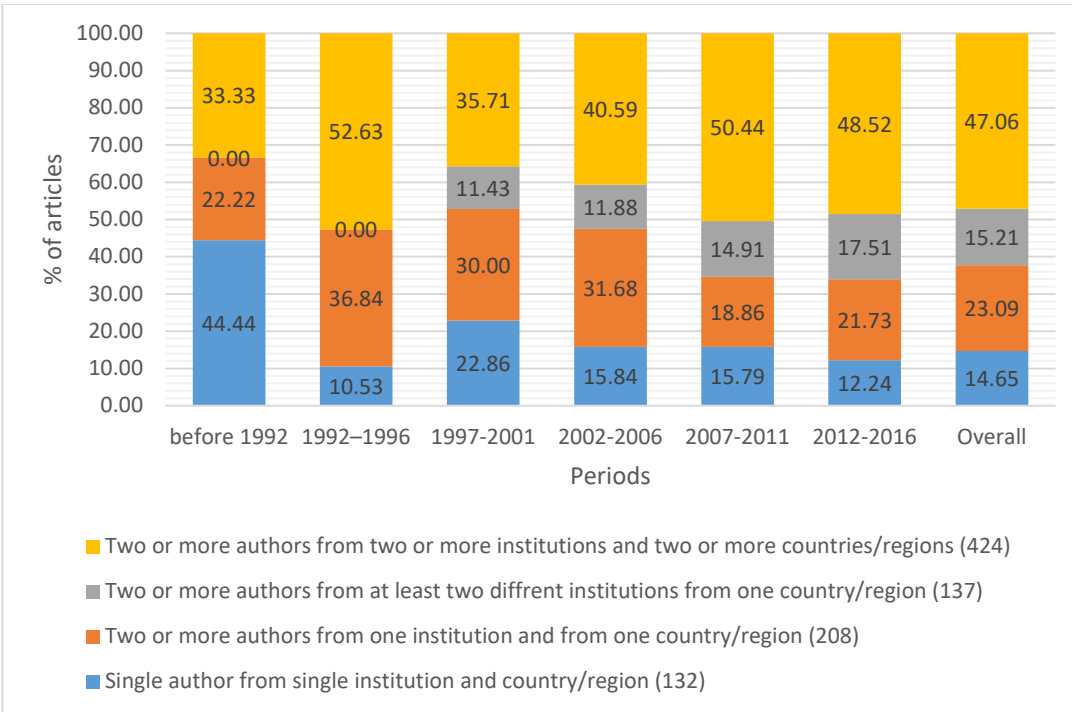


2012-2016

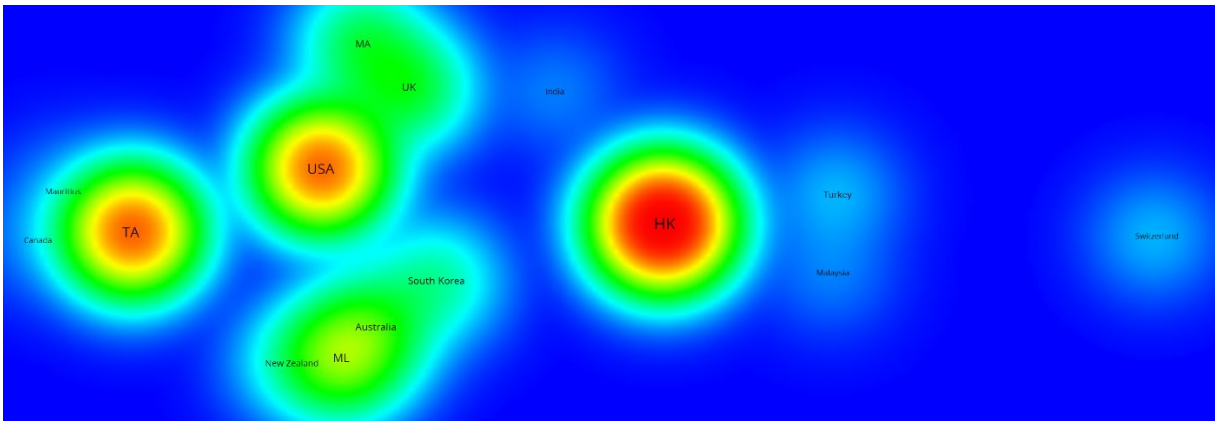


Overall

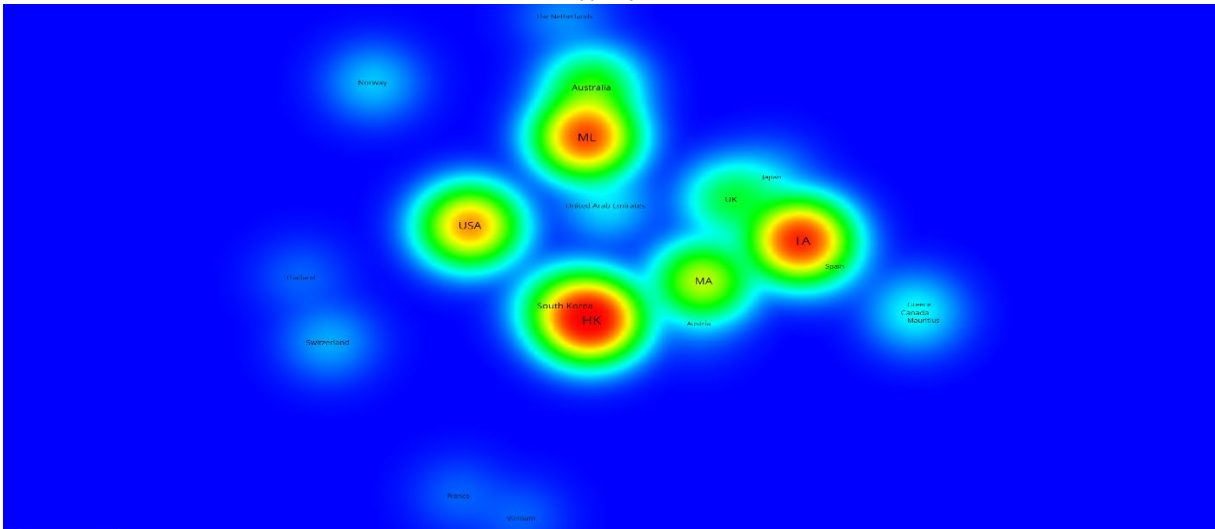
**Figure 3.** Visualization of critical institutions in the largest component of the networks (last period and overall)



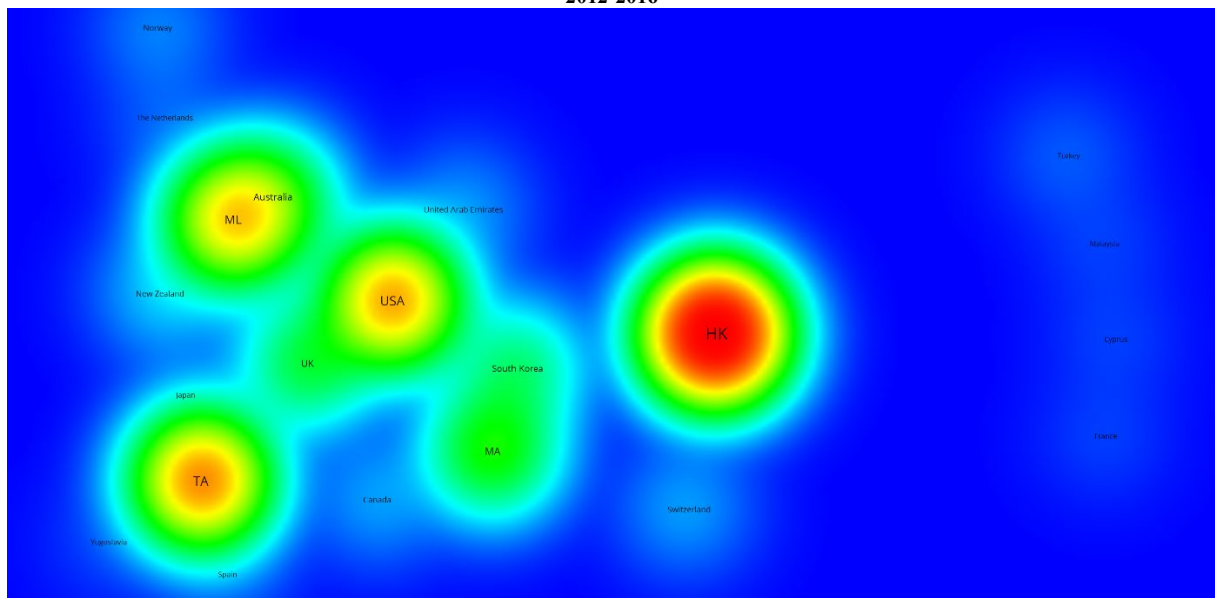
**Figure 4.** National collaborations versus international collaborations



2007-2011

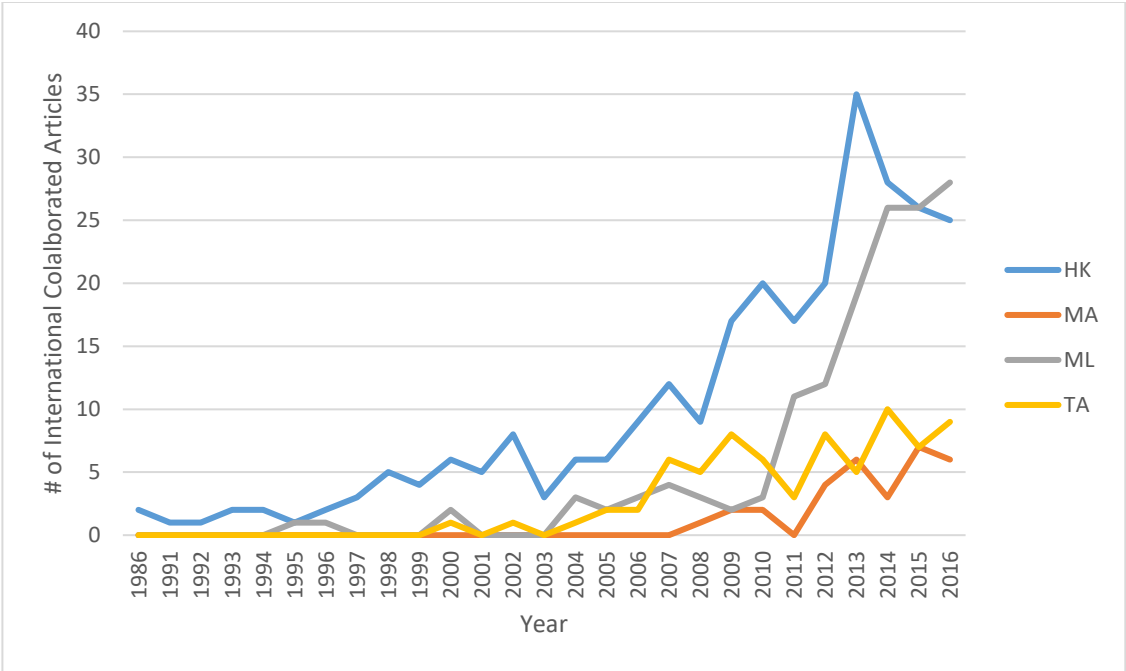


2012-2016



Overall

**Figure 5.** Visualization of countries/regions in the networks (last two periods and overall)



**Figure 6.** Evolution of international collaborations for each region