INTELLECTUAL CONNECTIONS IN TOURISM STUDIES

Abstract: This paper looks at intellectual connections in tourism studies through a co-citation analysis of its source knowledge. Reference sources from articles in *Annals of Tourism Research* are analyzed to describe source subject clustering and evolution over the last two decades. The subject clustering, connections and evolutions of twelve major source knowledge domains (namely, authenticity, tourist experiences, tourism planning, resident attitudes, tourism impacts, tourism area lifecycle, consumer behavior, backpacker tourism, performance approach, paradigms in tourism, dark tourism, and mobility) are visualized, described and discussed by four lustra (1998-2002, 2003-2007, 2008-2012, and 2013-2017). Implications of these source knowledge connections and evolutions for tourism studies are then reflected, and limitations of this research are also acknowledged.

Keywords: intellectual connection, source knowledge, co-citation analysis, evolution, *Annals of Tourism Research*.

INTRODUCTION

This study aims to elucidate source knowledge clustering, subject connections and evolutions as evidenced from the reference sources of *Annals of Tourism Research* over the two decades from 1998 to 2017. In state-of-the-art reviews and discussions, it is generally assumed that intellectual sources used to inform tourism studies and support its knowledge production are diverse, dynamic and changing over time. Nevertheless, few empirically-based textual/citation analyses

were devoted, if at all, to describing how source knowledge subjects cluster and disperse or decline over time. This article hence provides empirical evidence of how source knowledge domains for tourism studies have evolved and appeared fragmented in longitudinal terms. An evolutionary perspective is adopted in the analysis and interpretation of the changing features of source knowledge for tourism studies over the years, as manifested in *Annals of Tourism Research*. The guiding questions for this analysis are: What are the major source knowledge domains that have informed knowledge production in *Annals of Tourism Research* over the last twenty years? How have the subjects of the references been connecting, clustering and evolving over time amongst the major source knowledge domains?

LITERATURE REVIEW

Studies in the sociology of knowledge suggest that social interactions through knowledge networks result in discernible structures within a scientific community (Mulkay, 1977). A number of terms are used to describe such structures; these include "invisible colleges" (Price, 1963), "co-citation networks" (Small, 1973), "social contagions" (Levy & Nail, 1993), the colloquial use of "schools, specialties or fields" (Usdiken & Pasadeos, 1995), as well as "knowledge networks", "knowledge domains" or "source knowledge" for a field's research (Benckendorff & Zehrer, 2013; Hu & Racherla, 2008; Xiao & Smith, 2005, 2006a). In light of the social structuring of a research community, March (2005) observes that knowledge domains constitute a central proposition governing information exchanges and social interactions among researchers and henceforth the development of a field.

From an epistemic standpoint, this is indicative of a shift from positivist's measurement to constructivist's engagement in the knowledge enterprise, including social interactions and

knowledge networking in a scientific community (Xiao & Smith, 2007, p.318). Very often, the former is characterized by deductive approaches to the measuring of diffusions of knowledge including quantitative network analysis to define and describe knowledge use, whereas the latter, typically following a community paradigm, encompasses approaches to knowledge as contextualized and socially constructed meaning resulting from stakeholder collaborations and researcher or citation networks (Xiao & Smith, 2008).

The formation of knowledge networks is attributable to the nature of a scientific community (Mulkay, 1977), of which a defining character is the distinction between basic versus applied research (Reagan, 1967). In this association, tourism is an applied multidisciplinary community of academics and practitioners characterized not only by a responsiveness of its research to the industries and agencies, but also a diversity of its (source) knowledge domains resulting from cultural, linguistic, geographical and disciplinary boundaries separating sub-groups and specialized knowledge networks within the larger community.

Source knowledge domains are special types of knowledge networks and are formed on the premises of common research interests or problem areas (Collins, 1974). At the broader level, such knowledge networks or domains responsible for the diffusions of research have become tenuous due to two factors (Price, 1963): One, a great increase in inter-/multi-disciplinary research brought about by a problem area overarching several disciplines (of which tourism is an example); and, two, the exponential expansion of a discipline itself which leads to an internal proliferation of sub-fields. At this disciplinary level, as a scientific community grows in size, its specialties or sub-fields will also expand.

Methodically, knowledge domains in a scientific community can be examined in a number of ways, for example, by looking at members' formal and informal research

communications as social systems (Garvey & Griffith, 1967), in terms of bibliometric or citation analyses to elucidate co-citation networks and bibliographical couplings (Koseoglu, Rahimi, Okumus, & Liu, 2016; Small, 1973), from the perspectives of research collaborations (Beesley, 2004), and through analyses of media or forums around which knowledge domains are formed. Technically, knowledge domains have been subject to social network analysis, a technique for structural interpretations of social interactions, which allows scrutiny at both individual and group levels through an integration of data on individual attributes with data on interpersonal relations (Lang, 2004). It is a useful approach to examining issues such as components and clusters, and centrality and density in the social structuring of a research community.

Tourism has been variously referred to as an "indiscipline" (Tribe, 1997), a maturing field (Xiao & Smith, 2006a; Xiao, Jafari, Cloke & Tribe, 2013), or a young area of study (Belhassen & Caton 2009). As a domain in social sciences, studies have found that its subject clusters and indeed its architecture of knowledge could be seen through keyword analysis of its journals' articles (Wu, Xiao, Dong, Wang & Xue, 2012), as well as through tracing its intellectual connections with (or sources from) anthropology, sociology, social psychology and geography (Benckendorff & Zehrer, 2013; Xiao & Smith, 2008). Tseng, Ma, and Chou (2010, p.585) illustrate that between 1998 and 2007, there is a shift in tourism knowledge "from the studies of destination community to the studies of demand forecasting and authenticity". In their conceptual paper, Cohen and Cohen (2012, p.2195) suggest:

> "[S]ociological inquiry in tourism shifted from the earlier discourses of authenticity and the tourist gaze, respectively, to three key innovative theoretical approaches: mobilities, performativity and actor network theory, which reflect a broader meta-theoretical re-orientation in contemporary sociology and philosophy.

Notably, differences in these approaches and at times contrasting findings can be explained by several factors. For example, different journals represent different aspects of tourism. While *Annals of Tourism Research* more often takes a social science perspective, *Tourism Management* focuses more strongly on its planning and management implications. Therefore, intellectual structure of articles published in different journals varies. Nonetheless, conducting analysis on articles published in both journals does not necessarily mean covering both perspectives. Given that *Tourism Management* publishes substantially more articles than *Annals of Tourism Research*, the results could be biased towards a management perspective. In that sense, previous research does not show clear representation of (source) knowledge domains in specific subject areas for tourism research. Specifically, knowledge domains in tourism from a social science perspective is largely unclear. This notion has also been acknowledged by previous literature. In investigating the reference lists of three top tier tourism journals Benckendorff and Zehrer (2013) suggest that their findings could have been substantially different for each journal.

Theoretically, Kuhn's (1970) notion of scientific revolutions serves as a point of reference to guide this analysis and discussion. The dominant pre-Kuhnian perspective holds that science evolves in a linear pattern, with each research adding a piece to its body of knowledge. Kuhn (1970) revolutionizes this view by proposing four main stages that science goes through. The first is the *pre-science phase* in which no agreed ontologies, epistemologies, theories, concepts or in general the so-called "rules of science" exist. At this stage, it is critical to set rules that are agreed to be "truth" to rely upon when doing science, so as to understand, compare, and evaluate findings of different projects. Otherwise, contribution to the general body of knowledge will not occur. The second stage is the *normal science phase*, in which the rules of science exist,

and research occurs within available frameworks to enlarge the existing knowledge base. However, there are "anomalies" that cannot be explained by available rules. As anomalies increase, scientists start to challenge existing established rules and to expand the boundaries of a corpus through producing new knowledge. Kuhn labels this as the *crisis phase* after which two possible phases may occur. If the major anomalies are resolved, science returns to its normal phase. Alternatively, a new set of ontologies, epistemologies, theories, and concepts can be embraced to resolve anomalies. At that point, as Kuhn (1970) puts it, a paradigmatic shift occurs and the *revolution phase* in science begins. Arguably, such discussions on evolutions and revolutions of science could serve as useful contexts within which source knowledge connections and evolutions could be reflected in/for tourism studies.

METHODOLOGY

Zupic and Čater (2015)'s four-step workflow of science mapping was adopted for this co-citation analysis, which includes research design, compilation of data, analysis, and visualization of results.

   Research design. Zupic *and* Čater (2015) indicated that first, the base of research question(s) – knowledge base, research front, social network, knowledge domains, etc., and the appropriate method(s) for the research question(s) – co-citation, bibliographic coupling, co-word, co-author – should be identified in designing a co-citation analysis. This network analysis aims to elucidate intellectual connections and the evolution of source knowledge for tourism studies over the last 20 years. Based on co-citation data, the position of references consulted and the magnitude of knowledge domains sourced after can be visualized (Koseoglu, 2016).

Compilation of co-citation data. As the second step, Zupic and Čater (2015) indicates that an appropriate database should be identified and how the bibliometric data are filtered and exported should be explained. In these regards, three sub-sections were described below, including database and journal selection, process to extract related articles, and exporting data.

Database and journal selection. *Annals of Tourism Research* was used for this co-citation analysis for two reasons. First, amongst the many tourism journals, this periodical has an explicit scope in publishing social science research. Second, the journal is amongst the most well received periodical publications in tourism studies, and has had a consecutively high impact factor over the last two decades which is the time frame for this analysis.

Extracting articles. To form a corpus of text for examining intellectual connections amongst the different sources of knowledge, 1,393 full-length articles published in *Annals of Tourism Research* from January 1998 to December 2017 were extracted for this analysis, as full-length journal articles are indicative of originality and edge of research in a field for such source knowledge mapping (Ramos-Rodríguez & Ruíz-Navarro, 2004).

Exporting data. All the references cited and listed at the end of the above selected articles have formed the data. In total, 72,371 reference entries were retrieved from the Scopus database and used for co-citation analyses. Prior research suggested that co-citation analysis on both books and journal articles together may have provided bias in findings because the richer contents and more in-depth treatments or elaborations could increase the likelihood of books being cited (Tseng et al., 2010). Hence this analysis focuses only on journal articles.

Analysis. This step includes textual data cleaning, identifying subject areas within a given field, and the choice of citation analysis programs for visualizing source knowledge domains and networks. Operationally, the citation data (reference entries) were inputted into a Microsoft

Excel spreadsheet. Since we utilized co-authorship analysis via source titles instead of source author(s), first, frequency analyses were performed to eliminate discrepancies or mismatches due to spelling errors. All such errors were manually corrected. BibExcel was selected as the bibliometric program since it enables the analysis to automatically consider co-occurrence amongst citations. Specifically, it creates the network of co-cited references based on which visualization can be performed.

Visualization. Network analysis and multidimensional scaling techniques were used to describe the relationships amongst actors in the community or field. Co-citations were visualized by using the VOSviewer program, which enables a display of clustering, density and centrality of network relationships of the source knowledge domains.

FINDINGS: Source Knowledge Connections and Evolutions

For the sake of clarity in the following presentation, the term *article(s)* refers to the 1,393 published full-length papers in *Annals of Tourism Research* (1998-2017), whereas the term *reference(s)* means the citation entries listed at the end of the 1,393 articles.

This section addresses the first research question by elucidating the evolution of source knowledge domains over time. Articles in the dataset were divided into four lustra based on their publication year: 1998–2002, 2003–2007, 2008–2012, and 2013–2017. These five-year periods were generated to explore unknown patterns or trends in the source literature over the last two decades. Due to the large number of references, cutoff points are used in each period to select the most influential papers as suggested by Leung, Sun and Bai (2017). Notably, the top 100 most frequently cited sources were selected to identify patterns and trends in each lustrum (see Appendix as online supplement). In light of prior studies, analyzing frequently cited references is

useful to accurately visualize source knowledge domains in different time periods (Ramos-Rodríguez & Ruíz-Navarro, 2004).

Kuhn (1962) stated that "… if I am right that each scientific revolution alters the historical perspective of the community that experiences it, then that change of perspective should affect the structure of post-revolutionary textbooks and research publications. One such effect – a shift in the distribution of the technical literature cited in the footnotes to research reports – ought to be studied as a possible index to the occurrence of revolutions" (p.172). In other words, as highlighted by Sullivan, Koester, White and Kern (1979), co-citation patterns may be used to identify the scientific revolution and to reflect the emergence of a new paradigm. Therefore, on the note of its applicability, the Kuhnian approach has been widely used in many studies to interpret and reflect on the evolutions of a discipline or field (despite its inherent concerns, as noted in the limitations). For example, in a recent state-of-the-art citation analysis of innovation policy research, while the authors (Burmaoglu & Saritas, 2019) attempted to introduce new approaches, they remain to mainly allude to Kuhn's notion on paradigm shift in their account of evolutions in the innovation policy domain, as citation patterns are empirical and objective approaches to detecting and elucidating paradigms and paradigm shifts (Nerur et al., 2008). Hence, to gain a deeper level of understanding, co-citation analyses were conducted for each period, where the smart local moving algorithm was used as the clustering method (Waltman & Van Eck, 2013).

Kuhn (1962/1970, 1974) uses paradigm as a formulation of concepts with methods, theories, and approaches to solve research problems and to elucidate the development of science. However, as indicated by Vanner and Matha (2013), the term paradigm itself has different meanings in relation to belief, concept, theory, tradition, practice, and even attitude of

researchers in a community. Notably, with this Kuhnian notion as a point of reference, tourism studies in the lens of its journals' citation networks and patterns is conducive to a scrutiny of its evolution regardless of whether there is a paradigm shift or not.

In Figures 2-5, the upper part of the VOSViewer diagram (A) visualizes source knowledge networks resulting from the co-citation analysis for each period. Notably, each reference is represented by circles, the size of which is indicative of the normalized number of citations received by the articles. The thickness of the lines shows the strength of co-citation ties. The color of the circle demonstrates the cluster with which a reference is associated (Leung et al., 2017). Each circle was labeled by the code given by the researchers for a reference entry. The lower part of the VOSViewer diagram (B) helps to visualize the conceptual structure of the cited sources through "heat maps". The link and proximity between two references present their co-citation relationships. Warmer colors and bolded fonts in the heat map emphasize that a group of circles in a given area are frequently cited and co-cited together. In this regard, circles with bigger sizes and those around the warmer colors can be seen as influential constituents of a given source knowledge domain. Operationally, the stages of evolution were identified via a qualitative approach by considering citation scores of references. Hence, high citation scores are assumed as emerging papers in the examination period as used by Burmaoglu and Saritas (2019).

In addition, Figure 1 shows the evolution of source knowledge domains over the four lustra, in which clouds indicate the presence or existence of a knowledge domain, and lines denote discourses formulating such knowledge domains.

Insert Figure 1 here

Intellectual connections (1998-2002)

The first lustrum includes only 290 articles of the sample (1,393 articles). For co-citation analysis, 107 references are found to have been cited at least five times in these 290 articles. Figure 2 illustrates intellectual connections of these articles by the source knowledge on which they have been developed. Five subject clusters, each representing a distinct source knowledge domain, are identified in the analysis. Overall, normal science phase is more dominant in this time period.

The first cluster (green in color) is dominated by references to tourism impacts and resident attitudes towards them. Overall interconnection of references is high, creating warmer colors in the heat map, with no specific reference standing out. The concentration around the references 20 (McCool & Martin, 1994), 99 (Pizam, 1978), 52 (Sheldon & Var, 1984), and 113 (Brougham & Butler, 1981) in the heat map refers to their central role in this knowledge domain. The empirical study by Pizam (1978) brought up the issue of social costs of tourism and found that the latter has negative relationship with resident attitudes towards tourists and tourism development in general. Sheldon and Var (1984) performed factor analysis and identified eight factors concerning residents' attitudes towards the impacts of tourism development. Segmentation analysis by Brougham and Butler (1981) illustrated that attitudes are not similar and vary with respect to different resident groups. McCool and Martin (1994) found that the role of community attachment is crucial in this matter. Notably, quantitatively driven relatively similar models dominate in these references. In this regard, as the theoretical basis of this domain, the aforementioned provide means to extend knowledge within well-defined scientific rules. This is a good example of the Kuhnian (1970) normal science.

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The second cluster (blue in color) is dominated by references to tourism planning, especially with a high focus on developing countries. Many of the references in this cluster are interconnected creating relatively high concentration around this knowledge domain. Similar to the previous cluster, no specific reference stands out. Of relatively influential references in tourism planning, 152 by Wilkinson (1989) provided planning and development strategies for island microstates;167 by Oppermann (1993) presented tourist space model for developing countries; 43 by Brohman (1996) criticized "outward-orientation" of tourism development strategies in developing countries and pinpointed the risks and problems they may bring. A common feature of many references in this cluster is that they tend to focus on alternative types of tourism when it comes to planning. Given the similarity of aforementioned references and that rules of science are not being challenged, the feature of a normal science phase is evident.

The third cluster (purple in color) is dominated by references to destination life cycle. Not surprisingly, Butler's (1980) seminal work (reference 77) is the most influential in this cluster. However, the number of references in this cluster is relatively fewer compared to others. As the heat map illustrates, the interconnection between references is low. It implies that this knowledge domain is weak. In other words, destination lifecycle is influential in tourism scholarship, however, as a somewhat isolated paper, rather than as a strong knowledge domain. Reference 166 by Getz (1992) has an important role in this domain. By analyzing the historical development of Niagara Falls, the author revealed that in a real life scenario, the hypothetical life cycle stages are problematic to differentiate. Historical development of the destination did not follow the hypothetical model and various aspects of different stages constantly coexisted in the case of Niagara. From a Kuhnian perspective, elements of a crisis phase are visible in this domain, and the extent to which its theoretical basis represents "truth" was largely questioned.

The fourth cluster (yellow in color) is dominated by references to authenticity and tourist experience with a strong anthropological focus. As the co-citation map illustrates, this is the most influential knowledge domain for this time period. Some of the most influential references came from Erik Cohen (references 4 and 9), who set the theoretical foundation. In his earlier paper, Cohen (1979) proposed five types of tourist experiences, namely, the recreational, diversionary, experiential, experimental, and existential modes. Later, Cohen (1988) set conceptual groundworks to understand commoditization, authenticity and authentic tourist experiences. Bruner's (1991) work (reference 105) changed the direction of the discourse to transformation of self, suggesting that tourism in developing countries brings more transformation to residents than to tourists. Evidently, the theoretical pillars that were set a decade or two ago, are still dominant in this time period, resembling the normal science phase.

The final cluster (red in color) can be divided into two sub-clusters in terms of topics. One is dominant with references to the fundamentals of tourism. For example, on the left, in reference 80, Leiper (1979) conceptualized the definitions of tourism and its five elements including tourists, tourist industry and the three geographical elements (i.e., source region, transit route, and destination). This reference is a good example of the creation of scientific rules; in this context, theoretical and conceptual rules were created for future research to rely on. On the right, the second sub-cluster is related to consumer behavior in tourism, with emphasis on marketing and destination image. Amongst influential references, 35 by Gartner (1994) developed theoretical basis to understand image formation process, whereas 34 by Fakeye and Crompton (1991) discussed the differences between destination image perceptions of prospective, first time and repeat visitors. Similar to other domains, well-established rules dominate discourses under

which knowledge extension occurs. Notably, the normal science phase is a suitable description of this source knowledge domain for tourism studies at the turn of the century.

Intellectual connections (2003-2007)

This second period includes 273 articles of the sample (1,393 articles). For co-citation analysis, 134 references cited at least five times in these 273 articles were analyzed. Compared to the prior lustrum, five distinct source knowledge domains are identified (Figure 3). Notably, while these sources appear somewhat disconnected in subject, a good number of topics are found to have merged together into one distinct new domain of source knowledge. While normal science phase still dominates, the indicators of crisis have appeared.

The first cluster (in purple) combines references to resident attitudes towards tourism development and its impacts. Compared to the previous period, this cluster has fewer references. The influence of this domain starts to decrease. As the heat map shows, relatively higher concentration occurs around references 54 (Gursoy, Jurowski, & Uysal, 2002) and 55 (Perdue, Long, & Allen, 1990), both of which used social exchange theory to model residents' attitudes towards tourism development. No critical influential references are available, pushing paradigmatic boundaries of this domain to indicate a change towards crisis stage. Which may be characteristic of normal science.

Insert Figure 3 here

In light of evolution, substantial changes have occurred in the destination life cycle domain. Butler's (1980) work (reference 77) remains to be highly influential as a seminal piece of source knowledge in this domain. Reference 166 by Getz (1992) on the case of Niagara Falls appears next to it. No other influential reference surrounds reference 77, to provide a broader or

thicker basis for lifecycle theorizing. The crisis that started in the previous lustrum or before

neither turns to revolution nor returns back to the normal phase. As a result, the life cycle cluster

ceases to exist as a distinct knowledge domain, and connect with references to the fundamentals

of tourism such as 205, the work by Jafari (1990) on the basis of tourism education. This new

cluster (in green) is covering a considerably large area on the map. However, as indicated by the

heat map, the concentration occurs only around Butler's work, while no other reference stands

out in this cluster. Interconnections between references are also weak, indicating an instability of

this source knowledge domain.

Additionally, consumer behavior research stands as another distinct source knowledge

domain in the intellectual map (the red cluster). Very high interconnections of references have

created a high concentration in the heat map. Main concentration occurs around references 1

(Woodside & Lysonski, 1989) and 8 (Um & Crompton, 1990) on destination choices, 212

(Gitelson & Crompton, 1983) on information sources, as well as 34 (Fakeye & Crompton, 1991)

on destination image. Interestingly, some studies published during 1998 – 2002 have become

influential references in this source knowledge domain. For example, in reference 49, Baker and

Crompton (2000) introduced a model by testing the relationships between quality, satisfaction

and behavioral intentions. Reference 204 by Kozak (2001) modelled relationships between

satisfaction, previous visits, and behavioral intention. All these references to quantitative models

are indicative of the dominance of post-positivist approaches, implying that the normal science

phase in the consumer behavior domain has been continuing onto this time period.

Moreover, authenticity and tourist experiences are displayed in the same cluster (in blue).

Consecutively, the concentration and density of this source knowledge domain have been carried

on over the years. Cohen's prior works on authenticity and tourist experience have remained

influential in the community of citers. However, indications of change start to appear. One of the significant additions to influential references is 209 by Aramberri (2001), where the author challenged traditional frameworks suggested by existing paradigms in tourism, including anthropologists' view on the understanding of authenticity in tourist experiences. However, the point is, what is considered authentic may well be imposed by anthropologists and reflects academics' opinions rather than subjective individual truth: "authentic is what academics and other social scientists define as such, and the question of why an ecotourism in the Amazon should be a more genuine experience than a visit to the Disneyworld begs a final answer: because some scholars say so. This normative fallacy seems a good reason to divest the notion of authenticity of its theoretical ambitions" (Aramberri, 2001, p.740).

The source knowledge domain of tourism planning ceases to exist in this time period. Instead, research on backpacker tourism formulates a new cluster (in yellow). Notably, in alignment with prior reviews of published articles in *Annals of Tourism Research*, Xiao and Smith (2006b) and Xiao, Jafari, Cloke and Tribe (2013) reported that planning studies were recorded with decreasing frequency over the first 30 years of the journal's continuous publication. Arguably, it could be the continuous loss of interest in this domain rather than any paradigmatic shift that has facilitated its inanimateness.

Note that in the previous lustrum, planning studies mainly focused on developing countries and alternative types of tourism. Interestingly, a new cluster dominant with references to backpacker tourism appears in this time period. Presumably, backpacker tourism came to research spotlight, and gained scholarly attention as an alternative form of tourism in the developing world. The cluster of backpacker studies has fewer but well and strongly connected references. The main concentration in this cluster is towards the authenticity and experience

cluster, centering around references 14 (Uriely, Yonay, & Simchai, 2002) and 94 (Noy, 2004) on anthropological approaches to understanding backpacker experiences. For example, Uriely et al. (2002) questioned whether backpacking is a type or a form of tourism. Relying on phenomenological typologies of tourist experiences, the authors concluded that backpacking should be regarded as a form of tourism. It is interesting to elaborate upon the scientific phase of this domain. If the latter is seen as an isolated domain, the aforementioned references have lent to the formation of its definitions and conceptualizations, and are arguably indicative of a transition from pre-science to normal science. However, within the general body of tourism knowledge, it can be seen as a new path, a novel approach or setting for researching tourist experiences.

Intellectual connections (2008-2012)

The third lustrum includes 347 articles of the sample (1,393 articles). For co-citation analysis, 100 references are cited at least seven times in these 347 articles. The intellectual structure of this period is presented in Figure 4. As the figure illustrates, intellectual connections in this period are notably different from those in the previous two lustra. The number of source knowledge domains has increased from five to seven, along with other crucial changes in the rules of science. These changes are indicative of crises in the current stage of tourism studies.

One of the changes relates to the distancing of experience from authenticity and merging with backpacker studies. Separated from experience studies, authenticity positions itself as a distinct knowledge domain (the orange cluster). Major changes to the rules of the game can be vividly observed. The main concentration is around reference 58 by Wang (1999), which is an evident attempt to push the boundaries of the authenticity discourse. Wang's observation was that tourism studies mainly use objectivism and constructivism approaches to understanding the

"discovered" and "created" aspects of authenticity. Both approaches, however, are limited in their explanatory power and can explain only the authenticity of toured objects (object-related authenticity). The author instead postulates a philosophical shift and adopts a postmodernist approach to authenticity, in which differences between true or false, real or imaginary are blurred, such as the hyper-realities in Disneyland. As Wang put it, postmodernism paves the way to explaining activity-related authenticity, which he refers to as existential authenticity. The latter is "a potential existential state of Being that is to be activated by tourist activities [… and] can have nothing to do with the authenticity of toured objects" (Wang, 1999, p.352). Reference 108 by Steinger and Reisinger (2006), although less frequently cited, revisits existential authenticity from a Heideggerian perspective, and strengthens the theoretical grounds of this domain of source knowledge. Another influential work in this period is reference 50 by Reisinger and Steiner (2006). Both authors review object authenticity in the tourism literature and come to a rather radical conclusion: "scholars should abandon the concept and the term because there is no common ground as to their existence, meaning, or importance" (Reisinger & Steiner, 2006, p.65). It is interesting to note that Wang's (1999) article appeared in the previous lustrum, and gained popularity in later periods, which is indicative of an extensive citation life span of this source. As an example of intellectual connections, it is notable that the two more recent sources (Reisinger & Steiner, 2006; Steinger & Reisinger, 2006) have been playing a referral role in popularizing Wang's (1999) conception on existential rather than object-related authenticity. Given the transformation in its theoretical basis, a sense of crisis could be felt in this domain.

Similar lines of observations are notable in the visual map of the tourist experience and backpacker studies domains (the green cluster) in Figure 4. Concentration occurs on the right and left edges of the cluster, which respectively combine references related to tourist experience and

backpacker tourism. Seemingly, Uriely's (2005) work (reference 90) is an important addition to this source knowledge domain. The author presented four conceptual developments in the study of tourist experience, and argued that there is a turn to postmodernist theorizing of tourist experiences.

Butlers' destination life cycle (reference 77) remains to be frequently cited and yet an isolated reference. Resident attitudes and impact studies, and life cycle become substantially less popular. While they discontinue as separate knowledge domains, some of the influential and frequently cited references in these areas are connected in the red cluster. Therefore, this cluster could be labelled as "Classics" (the red cluster) where essential references of previously popular knowledge domains are generally connected here. Not surprisingly, this cluster covers a large area in the map, but its interconnections between/amongst the references are very low. Arguably, none of the Kuhnian (1970) phases explains this trend. Instead, this latter state could be understood as a maturation phase in tourism studies, in which major research gaps and questions have been explored under the existing scientific rules. New ontological, epistemological or theoretical perspectives have not appeared to chart new territories in tourism knowledge production. References to mature source knowledge domains have merged together, although distantly, to provide theoretical basis for the overall body of tourism knowledge. Butler's work is indeed a great example in this context. Although, to the best of authors' knowledge, the applicability of the hypothetical life cycle model to a destination was not supported, its influence on tourism studies is likely to continue.

Consumer behavior continues to be a distinct knowledge domain (the light blue cluster). The relatively high interconnection suggests that the knowledge domain is still influential, however, substantially less so, compared to the previous lustrum, arguably, due to no

groundbreaking additions to its theoretical pillars and no observable change in its ontological or epistemological stands. A relatively high concentration occurs around references 1 (Woodside & Lysonski, 1989) and 204 (Kozak, 2001) on destination choice. Presumably, a normal science phase continues.

Insert Figure 4 here

Notably, three new knowledge domains have emerged in this lustrum. One of them, labeled as "paradigm" (the yellow cluster), combines references focusing on ontological and epistemological aspects of tourism. This domain comes into existence after the publication of influential references during the previous and this lustra, such as 93 (Tribe, 2006), 100 (Van der Duim, 2007), 265 (Franklin, 2004), and 107 (Tribe, 2010). Tribe (2006), for example, adopted a social constructionist approach to double-selectivity in knowledge creation due to power dynamics in tourism. Van der Duim (2007) applied actor network theory to the creation of tourism knowledge and proposed the conceptual framework that consists of people, objects and spaces. Franklin (2004) discussed the origins, relational materialism and significance of tourism, and suggested a new ontology. As the domain evolves, a later study by Tribe (2010) on epistemological and sociological aspects of tourism also takes a central role. The emergence of "paradigm" as a source knowledge domain in this period vividly implies the start of crisis in Kuhnian term in the overall body of tourism social science, and by subjects, it connects very well with authenticity, experience and backpacker studies in their phase of crisis.

Another important addition to the intellectual structure is the cluster between authenticity and backpacker studies (in dark blue). This cluster is dominated by studies on photography, performance and stagedness. Arguably, the cluster owes its existence to Edensor's two papers, reference 44 (Edensor, 2001) and 69 (Edensor, 2000) respectively in the figure. As the heat map

shows, the main concentration in this clusters occurs around 44. The author put forward the idea that tourism should be understood as a form of performance in which tourists continually (re)produce various forms of space. Labeled as a performance approach, this knowledge domain receives attention of scholars as the heat map illustrates high interconnections not only amongst references within the cluster but also with those on experience. Presumably, the marketing literature also benefits from this domain since constituents of this cluster provide a theoretical approach to understanding how tourism spaces can be reproduced, staged or presented through photographs (Larsen, 2005), postcards (Markwick, 2001), travel brochures (Jenkins, 2003), and narratives (Morgan & Pritchard, 2005) as evident in references 247, 258, 45, and 254 respectively. Similar to previous discussions, this domain can be seen as the creation of new venues in light of the changes occurring in the overall body of tourism knowledge.

Finally, dark tourism as a new cluster (in purple) is formulated with relatively fewer references. The heat map shows some concentration around reference 250 where Seaton (1996, p.234) discussed why death "has been an element of tourism longer than any other form of heritage". However, due to the limited number of, and low interconnections between the references, this source knowledge domain could well be seen as a temporary research trend.

Intellectual connections (2013-2017)

This fourth period includes 483 articles of the sample (1,393 articles). From them, 126 references cited at least seven times were co-citation analyzed. The intellectual structure is presented in Figure 5. The number of clusters in this time period decreases to five. The main feature in this lustrum is that many source knowledge domains appear to connect with one another formulating

mixed clusters on various topics. Presumably, tourism social science is getting more and more matured, as crisis continues and co-exists in its evolution.

One of the changes is the relative loss of interest in backpacker studies. As a result, references to tourist experience and authenticity are connected in one cluster again (in yellow). Reference 58 by Wang (1999) clearly leads in the authenticity discourse in this period. A second concentration occurs around an earlier mentioned reference 108 by Steiner and Reisinger (2006) on theoretical basis of existential authenticity within a Heideggerian framework. The shift to postmodernist approach and the embrace of existential authenticity are indicative of evolution of the field in terms of intellectual connections. The intriguing question then becomes the future of this domain. As no central/influential references are identified of this source knowledge domain in this period, it would be interesting to ask whether postmodernism, as the edge of philosophical approaches, is to mark the continuity of, or to end altogether, the authenticity discussions. A recent review paper by Whalen (2018) suggested that netnography has been increasingly used as new methodological approaches to identifying venues for different domains including authenticity and experiences.

Insert Figure 5 here

Notably, the heat map shows two second-tier concentration points around the green cluster. The performance approach attracts more attention during this period. On the upper part of this cluster, the concentration is around the performance approach. Edensor's (2000, 2001) works (references 69 and 44 respectively) continue to be the main theoretical bases of this domain and connect with marketing and photography related references. In addition, a few influential references such as No. 13 on backpacker ethnography (Sørensen, 2003) and No. 94 on backpacker narratives (Noy, 2004) also join this knowledge domain. Given that the performance

approach starts to provide theoretical basis for more varied discourses, it is fair to suggest that a revolution has somehow occurred. The lower end of this cluster is dominated by references to mobility, an emerging source knowledge domain. Notably, the heat map shows concentration around references 292 (Hannam, Butler, & Paris, 2014), 324 (Sheller & Urry, 2006) and 25 (Cohen & Cohen, 2012) on mobilities. Sheller and Urry (2006, p.207) argued that "a new paradigm is being formed within the social sciences, the 'new mobilities' paradigm" and laid ontological and epistemological grounds for future mobility studies. The other two references (Cohen & Cohen, 2012; Hannam et al., 2014) provided conceptual clarifications and suggested specific future directions in this area. An intriguing question here is whether tourism and mobility will grow to become two distinct branches of studies by themselves, or merge into one domain of knowledge.

Also notable in this period is dark tourism, which has lost in the density of concentration and connections as a source knowledge domain, while consumer behavior research has displayed no evidence in breaking its boundaries of knowledge, and has appeared to merge together with the classic sources. The "classics" are regrouped into two clusters (purple and red). Both clusters have low interconnectivity and consist of seemingly unrelated references. This occurs largely because, some of the "classical works" contribute to the "main body" of tourism scholarship in both theory and method and get high citations from studies on various topics. Nevertheless, the red cluster on its own is dominant with references related to consumer behavior, tourism impacts and residents' attitudes. The relatively high concentration is around reference 28 by Fornell and Larcker (1981), a seminal work on structural equation modelling, as a reflection of dominant epistemological approach in these discourses. In the purple cluster, relative dominance can be seen around tourism economics related references (329, 314, 96) which respectively cover topics

such as economic growth (Lee & Chang, 2008), and demand modelling and econometric forecasting (Li, Song, & Witt, 2005; Song & Li, 2008).

The question then becomes why these references are frequently cited in diverse settings after all these years. In a way, like "must visit" attractions in a destination (e.g., Eiffel Tower in Paris), there seem to be "must cite" references in different subject areas in tourism studies (e.g., life cycle in resort/destination development, and authenticity or gaze in tourist experience). Arguably, the staying power of the classics could be attributable to the expansion or extension of contexts within which a theory is applied or re-applied. Take destination life cycle as an example. In addition to a geographical area or place, the model has now been applied to diverse settings such as events and festivals (Mariani & Giorgio, 2017) and tourism institutions (Mellon & Bramwell, 2018). As Tribe (2018) noted, classics are also shown as role models for researchers. Their applicability or non-applicability of classical theories or models are still discussed and hence classics are well cited (Wang, Weaver, & Li, 2016). Nonetheless, from an evolutionary perspective, while the role of the classics is unequivocal in the development of prior (past) tourism research, it would be intriguing to ask and to see how these classics (and the emerging or new ones) would guide and shape the future of tourism knowledge production.

Finally, discussions about paradigms continue, which proves itself as a distinct knowledge domain (the blue cluster). The concentration is dominantly around Tribe's (2006, 2010) works (references 93 and 107). Relatively recent and influential additions to the domain are references 33 (Pritchard, Morgan, & Ateljevic, 2011) and 287 (Xin, Tribe, & Chambers, 2013). In the former, as a response to Mair and Reid's (2007, p.519) call to "debate about the nature of social research and the role that we, as researchers, can and should play in affecting social change", the authors proposed hopeful tourism, set its ontological, and epistemological

basis, and came up with agenda for researchers and educators that are concerned with "challenges of creating just and sustainable tourism worlds" (Pritchard et al., 2011, p. 941). The work by Xin et al. (2013) has an epistemological focus, and investigates conceptual research in tourism to provide its definition and guidance with nine criteria for quality in its conduct. Evidently, such attempts to push boundaries of tourism knowledge are continuing, while elements of evolution and revolution are visible in various domains.

DISCUSSION AND CONCLUSION

This article investigates intellectual connections and visualizes citation subject clustering and source knowledge evolution over four lustra in tourism studies. The analysis reveals that intellectual sources used to inform tourism studies and support its knowledge production are diverse, dynamic and changing over time. Source knowledge domains have (e)merged as subjects clustered or dispersed, have declined in centrality or density, and/or have maintained their momentum as influential domains are identified. An evolutionary perspective is incorporated in the analysis and interpretation of the changing features of source knowledge for tourism studies over the years, as manifested in *Annals of Tourism Research*. Notably, the study contributes to state-of-the-art tourism literature in a number of ways.

First, this co-citation analysis reveals that intellectual sources used to inform tourism studies and support its knowledge production are diverse, dynamic and changing over time. Over the four lustra observed, major source knowledge domains have (e)merged as subjects clustered or dispersed. For example, in 1998-2002, citation subject clustering has formed knowledge domains such as "residents' attitudes and tourism impacts", "tourism planning", "destination lifecycle", "authenticity and tourist experience", "paradigms and theories", and "consumer

behavior". Moving onto the subsequent lustra, some domains have declined in centrality or density such as "residents' attitudes and tourism impacts" and "tourism planning" in 2003-2007 and 2008-2012 respectively; some have merged into other subject clusters such as "lifecycle" merging into "fundamentals" (2003-2007), and "authenticity and experience" merging into "backpacking research" (2008-2012); some have maintained their momentum as an influential domain of source knowledge over several periods such as "authenticity and tourist experience"; some have gained popularity or prominence as the field moves on (e.g., consumer behavior and marketing in 2003-2007); and some have emerged as a new domain of source knowledge for tourism studies (such as "backpacker" in 2003-2007, "paradigms" in 2008-2012, and "mobilities" in 2013-2017). Interestingly, as the lens zooms onto the last lustrum (2013-2017), citation subjects are found to have clustered into multiple knowledge domains that have appeared intellectually connected with one another in blurred boundaries. This could be a reflection of contemporary tourism studies as knowledge production and as a body of knowledge with "blurred, related and mixed" domains (Wu et al., 2012; Xiao & Smith, 2006b; Xiao et al., 2013).

Second, despite such variations or changes in its intellectual indebtedness, tourism studies over last twenty years have benefited from a largely stable knowledge base, which is reflected in the continuity of its major source knowledge domains over the two decades. Despite their rise and fall in popularity in different lustra, the major source knowledge domains have remained relatively steady over the years (Xiao & Smith, 2005, 2006a). Notably, intellectual connections through citation subject clustering have occurred and evolved, as a reflection of changing research interests or shifts of focus of the publishing community over time.

Third, the theory of scientific evolutions and revolutions has served as a useful context and interpretive framework (Kuhn, 1970) to account for subject clustering and change of the

identified source knowledge domains along the four lustra of observation. Some domains (e.g., authenticity, tourist experiences) have gone through crises due to philosophical changes. Others have stayed relatively longer in a state of normal science where/when crises do not seem to have occurred, and as a result such knowledge domains either completely disappear as the field moves on, or merge into the overall body of tourism knowledge. These observations have ontological and epistemological implications. Presumably, the rules and force fields of tourism social sciences in each of the identified source knowledge domains have been constantly challenging and challenged by their ongoing knowledge production.

Fourth, this study extends the theory of scientific evolution/revolution to the sociology of tourism knowledge. The analysis has identified features of normal science (1998-2002) in the first and the second lustra (2003-2007). Signs of crises have appeared in the second lustrum, whereas in the third lustrum (2008-2012) tourism sociology is found to enter into a stage of crises. The appearance of the "paradigms" cluster is also indicative of crisis in this stage of tourism studies. Further, in the last lustrum (2013-2017), elements of revolution are visible as the paradigmatic discourses continue. Interestingly, the coexistence of revolution and crisis is apparent, and may also contribute to theoretical advancement in tourism studies. Another addition to the theory of scientific evolution/revolution is the differences in the dynamics of various knowledge domains. As is evident from the source knowledge domain of tourism sociology, intellectual connections and subject clustering have appeared distinctively differently in different phases of tourism social science.

Fifth, maturation of a field could be reflected in various levels or phases of its research development (Tribe, 2018). Notably, crisis is an important phase to mark a field's evolution or revolution, but often it is not bound to occur at a definite time. In turn, the phase of being in a

state of normal science does not continue indefinitely. Within given sets of scientific rules, there are only limited gaps and research questions that researchers may explore. Eventually majors gaps will be filled and loss of interest will occur. In terms of life cycle, such a phase could be referred to as maturation. As source knowledge domains mature in a field, classics (a set of most influential references) will emerge and remain being most cited to serve as a reasonably steady base for a field's knowledge production over time. Take intellectual connections of tourism sociology as an example. In the first lustrum, references within clusters are close to each other in distance, forming visually distinctive "islands". In the last lustrum, references within clusters are less interconnected, and scattered around the map. Moreover, this analysis has also revealed citation subject clustering towards a blurred/mixed body of source knowledge, which appears in the last and most recent lustrum (2013-2017) along with this identified tendency of citing "the classics" in the tourism literature. Arguably, this could also be seen as a further break-down of disciplinary boundaries in contemporary tourism studies, which proudly has its own intellectual indebtedness or legacy to claim, such as citing "the tourism classics". In a way, this could also enhance the discussion on (in)disciplinary state of tourism studies (Tribe, 1997) from "who we are" to "what we are".

Sixth, as an echo to some of the conclusions by Pearce and Butler (2010) at the closure of the 2009 International Academy for the Study of Tourism conference book, the growth of tourism studies has been incremental in its knowledge production and in the variety and scope of citation subject clustering for future research. Results from this co-citation analysis suggest that source knowledge domains for tourism studies have appeared fragmented in longitudinal terms. Additionally, the study also enriches or expands the scope of interpretation of previous co-citation analyses (Benckendorff & Zehrer, 2013; Tseng et al., 2010). In the sociology of tourism,

for example, "authenticity", "tourist experience" and "backpacker studies" have (e)merged as a longstanding and most influential body of knowledge for tourism studies. Intellectual connections through these (e)merging citation subject clusters offer a vivid depiction of the changing landscapes of tourism knowledge as manifested in *Annals of Tourism Research*.

Seventh, different from previous investigations of knowledge domains, this study performed co-citation analysis on reference titles rather than (co-)author names. Such an approach, arguably, has enabled us to depict the most influential and at times groundbreaking references, and to qualitatively analyze their content to thereby reveal how, why and when knowledge transmission or transformation has occurred. Arguably, the publication of one critical source is not sufficient to result in crisis. For example, it was not until the publication of Reisinger and Steiner's (2006) and Steiner and Reisinger's (2006) works that Wang's (1999) much earlier published paper on existential authenticity gained much wider popularity and carried its influence up to the last lustrum. This raises an intriguing question: what other potential works are already out there, awaiting intellectual connections for such knowledge transformations to occur.

Additionally, the research has implications for academics as well as industry practitioners and policymakers. Notably, academics could find these identified patterns, networks or "big pictures" useful in (re)shaping their future research (Xiao, & Smith, 2006b; Xiao et al., 2013). Hopefully, practitioners or decision-makers in or related to the tourism sector could also formulate and (re-)orient destination development/management policies in light of specific or established tourism knowledge domains, including and certainly not limited to those identified and discussed in this study.

Notwithstanding, this analysis has its own limitations. The use of references from articles in a social sciences journal which is largely qualitative and "dedicated to developing theoretical constructs" could well reflect the scope and philosophy of the medium in the above analysis and discussion. As a complement, future studies could apply the same approach to more applied or more business-oriented periodicals such as *Journal of Travel Research* and *Tourism Management*, or to topically more specialized publications such as *Journal of Sustainable Tourism.* Additionally, while focusing on citations of articles from a single source journal has data retrieval implications, the inclusion of authored books or monographs as well as other journals could help yield a more comprehensive picture of intellectual connections through source knowledge for/in tourism studies. Furthermore, while the use of most cited papers facilitates comparisons in terms of intellectual connections and evolutions, future research could also include less frequently cited sources to investigate their roles or place in the development of tourism knowledge. Also, the use of a fixed five-year time period for analysis could bring with it constraints for interpretations, particularly when its implications are discussed from a Kuhnian perspective.

Lastly, and quintessentially, although paradigm shift as a theoretical point of reference has its capacity of explication of situations such as evolution of a research field and has thus been widely applied and cited in different academic communities (Clarke & Clegg, 2000), discipline-specific details and depth, as well as the broad spectrum of shift across the whole field of tourism studies are beyond the scope of this state-of-the-art co-citation analysis of source knowledge for tourism social science; nonetheless, they are useful pointers for future holistic reviews on the field's evolution.

REFERENCES

Aramberri, J. (2001). The host should get lost: Paradigms in the tourism theory. *Annals of Tourism Research*, *28*, 738-761.

Baker, D., & Crompton, J. (2000). Quality, satisfaction and behavioral intentions. *Annals of Tourism Research, 27*, 785-804.

Beesley, L. (2004). Multi-level complexity in the management of knowledge networks. *Journal of Knowledge Management, 8*(3), 71-100.

Benckendorff, P., & Zehrer, A. (2013). A network analysis of tourism research. *Annals of Tourism Research, 43*, 121-149.

Belhassen, Y., & Caton, K. (2009). Advancing understandings: A linguistic approach to tourism epistemology. *Annals of Tourism Research, 36*, 335–352.

Brohman, J. (1996). New directions in tourism for third world development. *Annals of Tourism Research, 23*, 48-70.

Brougham, J., & Butler, R. (1981). A segmentation analysis of resident attitudes to the social impact of tourism. *Annals of Tourism Research, 8*, 569-590.

Bruner, E. (1991). Transformation of self in tourism. *Annals of Tourism Research, 18*, 238-250.

Burmaoglu, S., & Saritas, O. (2019). An evolutionary analysis of the innovation policy domain: Is there a paradigm shift? *Scientometrics*, *118*(3), 823-847.

Butler, R. (1980). The concept of a tourist area cycle of evolution: implications for management of resources. *Canadian Geographer, 24*(1), 5-12.

Clarke, T., & Clegg, S. (2000). Management paradigms for the new millennium. *International Journal of Management Reviews, 2*(1), 45-64.

Cohen, E. (1979). A phenomenology of tourist experiences. *Sociology, 13*(2), 179-201.

Cohen, E. (1988). Authenticity and commoditization in tourism. *Annals of Tourism Research, 15*, 371-386.

Cohen, E., & Cohen, S. (2012). Current sociological theories and issues in tourism. *Annals of Tourism Research, 39*, 2177-2202.

Collins, H. (1974). The TEA set: Tacit knowledge and scientific networks. *Science Studies, 4*(2), 165-185.

Edensor, T. (2000). Staging tourism: Tourists as performers. *Annals of Tourism Research, 27*, 322-344.

Edensor, T. (2001). Performing tourism, staging tourism: (Re) producing tourist space and practice. *Tourist Studies, 1*(1), 59-81.

Fakeye, P., & Crompton, J. (1991). Image differences between prospective, first-time, and repeat visitors to the Lower Rio Grande Valley. *Journal of Travel Research, 30*(2), 10-16.

Fornell, C., & Larcker, D. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, *18*(1), 39-50.

Franklin, A. (2004). Tourism as an ordering: Towards a new ontology of tourism. *Tourist Studies, 4*(3), 277-301.

Gartner, W. (1994). Image formation process. *Journal of Travel & Tourism Marketing, 2*(2-3), 191-216.

Garvey, W., & Griffith, B. (1967). Scientific communication as a social system. *Science, 157*(3792), 1011-1016.

Getz, D. (1992). Tourism planning and destination life cycle. *Annals of Tourism Research, 19*, 752-770.

Gitelson, R. J., & Crompton, J. L. (1983). The planning horizons and sources of information used by pleasure vacationers. *Journal of Travel Research, 21*(3), 2-7.

Gursoy, D., Jurowski, C., & Uysal, M. (2002). Resident attitudes: A structural modeling approach. *Annals of Tourism Research, 29*, 79-105.

Hannam, K., Butler, G., & Paris, C. (2014). Developments and key issues in tourism mobilities. *Annals of Tourism Research, 44*, 171-185.

Hu, C., & Racherla, P. (2008). Visual representation of knowledge networks: A social network analysis of hospitality research domain. *International Journal of Hospitality Management, 27*, 302-312.

Jafari, J. (1990). Research and scholarship: The basis of tourism education. *Journal of Tourism Studies, 1*(1), 33-41.

Jenkins, O. (2003). Photography and travel brochures: The circle of representation. *Tourism Geographies, 5*, 305-328.

Koseoglu, M. (2016). Mapping the institutional collaboration network of strategic management research: 1980-2014. *Scientometrics*, *109*(1), 203-226.

Koseoglu, M., Rahimi, R., Okumus, F., & Liu, J. (2016). Bibliometric studies in tourism. *Annals of Tourism Research, 61*, 180-198.

Kozak, M. (2001). Repeaters' behavior at two distinct destinations. *Annals of Tourism Research, 28*, 784-807.

Kuhn, T. (1962/1970). *The structure of scientific revolutions*. Chicago: University of Chicago Press.

Kuhn, T. (1974). Second thoughts on paradigms. *In* F. Suppe, (ed.), *The structure of scientific theories* (pp.459-482). Urbana, IL: University of Illinois Press.

Lang, J. (2004). Social context and social capital as enablers of knowledge integration. *Journal of Knowledge Management, 8*(3), 89-105.

Larsen, J. (2005). Families seen sightseeing: Performativity of tourist photography. *Space and Culture, 8*(4), 416-434.

Lee, C., & Chang, C. (2008). Tourism development and economic growth: A closer look at panels. *Tourism Management, 29*, 180-192.

Leiper, N. (1979). The framework of tourism: Towards a definition of tourism, tourist, and the tourist industry. *Annals of Tourism Research, 6*, 390-407.

Leung, X., Sun, J., & Bai, B. (2017). Bibliometrics of social media research: A co-citation and co-word analysis. *International Journal of Hospitality Management*, *66*, 35-45.

Levy, D., & Nail, P. (1993). Contagion: A theoretical and empirical review and reconceptualization. *Genetic, Social, and General Psychology Monographs, 119*(2), 233-284.

Li, G., Song, H., & Witt, S. (2005). Recent developments in econometric modeling and forecasting. *Journal of Travel Research, 44*(1), 82-99.

Mair, H., & Reid, D. G. (2007). Leisure research and social change: A millennial state of the art. *Leisure/Loisir*, 31(2), 501-522.

March, J. (2005). Parochialism in the evolution of a research community: The case of organization studies. *Management and Organization Review, 1*(1), 5-22.

Mariani, M., & Giorgio, L. (2017). The "Pink Night" festival revisited: Meta-events and the role of destination partnerships in staging event tourism. *Annals of Tourism Research, 62*, 89-109.

Markwick, M. (2001). Postcards from Malta: Image, consumption, context. *Annals of Tourism Research, 28*, 417-438.

McCool, S., & Martin, S. (1994). Community attachment and attitudes toward tourism development. *Journal of Travel Research, 32*(3), 29-34.

Mellon, V., & Bramwell, B. (2018). The temporal evolution of tourism institutions. *Annals of Tourism Research, 69*, 42-52.

Morgan, N., & Pritchard, A. (2005). On souvenirs and metonymy: Narratives of memory, metaphor and materiality. *Tourist Studies, 5*(1), 29-53.

Mulkay, M. (1977) Sociology of the scientific research community. *In* I. Spiegel-Rosing & D. Price (eds.), *Science, technology, and society: A cross-disciplinary perspective* (pp.93-148). London: Sage

Nerur, S., Rasheed, A., & Natarajan, V. (2008). The intellectual structure of the strategic management field: An author co-citation analysis. *Strategic Management Journal*, *29*(3), 319-336.

Noy, C. (2004). This trip really changed me: Backpackers' narratives of self-change. *Annals of Tourism Research, 31*, 78-102.

Oppermann, M. (1993). Tourism space in developing countries. *Annals of Tourism Research, 20*, 535-556.

Pearce, D., & Butler, R. (2010). *Tourism research: A 20-20 vision*. London: Goodfellow. *Journal of Travel Research, 43*(3), 226-237.

Perdue, R., Long, P., & Allen, L. (1990). Resident support for tourism development. *Annals of Tourism Research, 17*, 586-599.

Pizam, A. (1978). Tourism's impacts: The social costs to the destination community as perceived by its residents. *Journal of Travel Research, 16*(4), 8-12.

Price, D. (1963). *Little science, big science*. New York: Columbia University Press.

Pritchard, A., Morgan, N., & Ateljevic, I. (2011). Hopeful tourism: A new transformative perspective. *Annals of Tourism Research*, *38*, 941-963.

Ramos-Rodríguez, A., & Ruíz-Navarro, J. (2004). Changes in the intellectual structure of strategic management research: A bibliometric study of the Strategic Management Journal, 1980–2000. *Strategic Management Journal*, *25*(10), 981-1004.

Reagan, M. (1967). Basic and applied research: A meaningful distinction?. *Science, 155*(3768), 1383-1386.

Reisinger, Y., & Steiner, C. J. (2006). Reconceptualizing object authenticity. *Annals of Tourism Research*, *33*, 65-86.

Seaton, A. (1996). Guided by the dark: From thanatopsis to thanatourism. *International Journal of Heritage Studies, 2*(4), 234-244.

Sheldon, P., & Var, T. (1984). Resident attitudes to tourism in North Wales. *Tourism Management, 5*, 40-47.

Sheller, M., & Urry, J. (2006). The new mobilities paradigm. *Environment and Planning A, 38*(2), 207-226.

Small, H. (1973) Co-citation in the scientific literature: A new measure of the relationship between two documents. *Journal of the American Society for Information Science*, *24*(4), 265-269.

Song, H., & Li, G. (2008). Tourism demand modelling and forecasting—A review of recent research. *Tourism Management, 29*, 203-220.

Sørensen, A. (2003). Backpacker ethnography. *Annals of Tourism Research, 30*, 847-867.

Steiner, C., & Reisinger, Y. (2006). Understanding existential authenticity. *Annals of Tourism Research, 33*, 299-318.

Sullivan, D., Koester, D., White, D., & Kern, R. (1979). Understanding rapid theoretical change in particle physics: A month-by-month co-citation analysis. In *Proceedings of the ASIS Annual Meeting*, *16*, 276-285, Minneapolis.

Tribe, J. (1997). The indiscipline of tourism. *Annals of Tourism Research, 24*, 638–657

Tribe, J. (2006). The truth about tourism. *Annals of Tourism Research, 33*, 360-381.

Tribe, J. (2010). Tribes, territories and networks in the tourism academy. *Annals of Tourism Research, 37*, 7-33.

Tribe, J. (2018). Creating and curating tourism knowledge. *Annals of Tourism Research, 73*, 14-25.

Tseng, H., Ma, Z., & Chou, L. (2010). An author-based citation and co-citation analysis on tourism research: 1998-2007. *Asia Pacific Management Review, 15*(4), 585-600.

Um, S., & Crompton, J. (1990). Attitude determinants in tourism destination choice. *Annals of Tourism Research, 17*, 432-448.

Uriely, N. (2005). The tourist experience: Conceptual developments. *Annals of Tourism Research, 32*, 199-216.

Uriely, N., Yonay, Y., & Simchai, D. (2002). Backpacking experiences: A type and form analysis. *Annals of Tourism Research, 29*, 520-538.

Usdiken, B., & Pasadeos, Y. (1995). Organizational analysis in North America and Europe: A comparison of co-citation networks. *Organization Studies, 16*(3), 503-526.

Van der Duim, R. (2007). Tourismscapes an actor-network perspective. *Annals of Tourism Research, 34*, 961-976.

Vanner, R., & Martha, B. (2013). *The use of paradigms in dynamix*. Retrieved from https://dynamix-project.eu/sites/default/files/D1.1list_Paradigms_public.pdf.

Wang, N. (1999). Rethinking authenticity in tourism experience. *Annals of Tourism Research, 26*, 349-370.

Wang, X., Weaver, D., Li, X., & Zhang, Y. (2016). In Butler (1980) we trust? Typology of citer motivations. *Annals of Tourism Research, 61*, 216-218.

Waltman, L., & Van Eck, N. (2013). A smart local moving algorithm for large-scale modularity-based community detection. *The European Physical Journal B*, *86*(11), 1-14.

Wilkinson, P. (1989). Strategies for tourism in island microstates. *Annals of Tourism Research, 16*, 153-177.

Whalen, E. A. (2018). Understanding a shifting methodology: A content analysis of the use of netnography in hospitality and tourism research. *International Journal of Contemporary Hospitality Management, 30*(11), 3423-3441.

Woodside, A., & Lysonski, S. (1989). A general model of traveler destination choice. *Journal of Travel Research, 27*(4), 8-14.

Wu, B., Xiao, H., Dong, X., Wang, M., & Xue, L. (2012). Tourism knowledge domains: A keyword analysis. *Asia Pacific Journal of Tourism Research, 17*(4), 355-380.

Xiao, H., & Smith, S. (2005). Source knowledge for tourism research. *Annals of Tourism Research, 32*, 272-275.

Xiao, H., & Smith, S. (2006a). The maturation of tourism research: Evidence from a content analysis. *Tourism Analysis, 10,* 335–348.

Xiao, H., & Smith, S. (2006b). The making of tourism research: Insights from a social sciences journal. *Annals of Tourism Research*, *33*, 490-507.

Xiao, H., & Smith, S. (2007). The use of tourism knowledge: Research propositions. *Annals of Tourism Research*, *34*, 310-331.

Xiao, H., & Smith, S. (2008). Knowledge impact: An appraisal of tourism scholarship. *Annals of Tourism Research, 35*, 62-83.

Xiao, H., Jafari, J., Cloke, P., & Tribe, J. (2013). Annals: 40-40 vision. *Annals of Tourism Research, 40*, 352-385.

Xin, S., Tribe, J., & Chambers, D. (2013). Conceptual research in tourism. *Annals of Tourism Research, 41*, 66-88.

Zupic, I., & Čater, T. (2015). Bibliometric methods in management and organization. *Organizational Research Methods, 18*(3), 429-472.

FIGURES
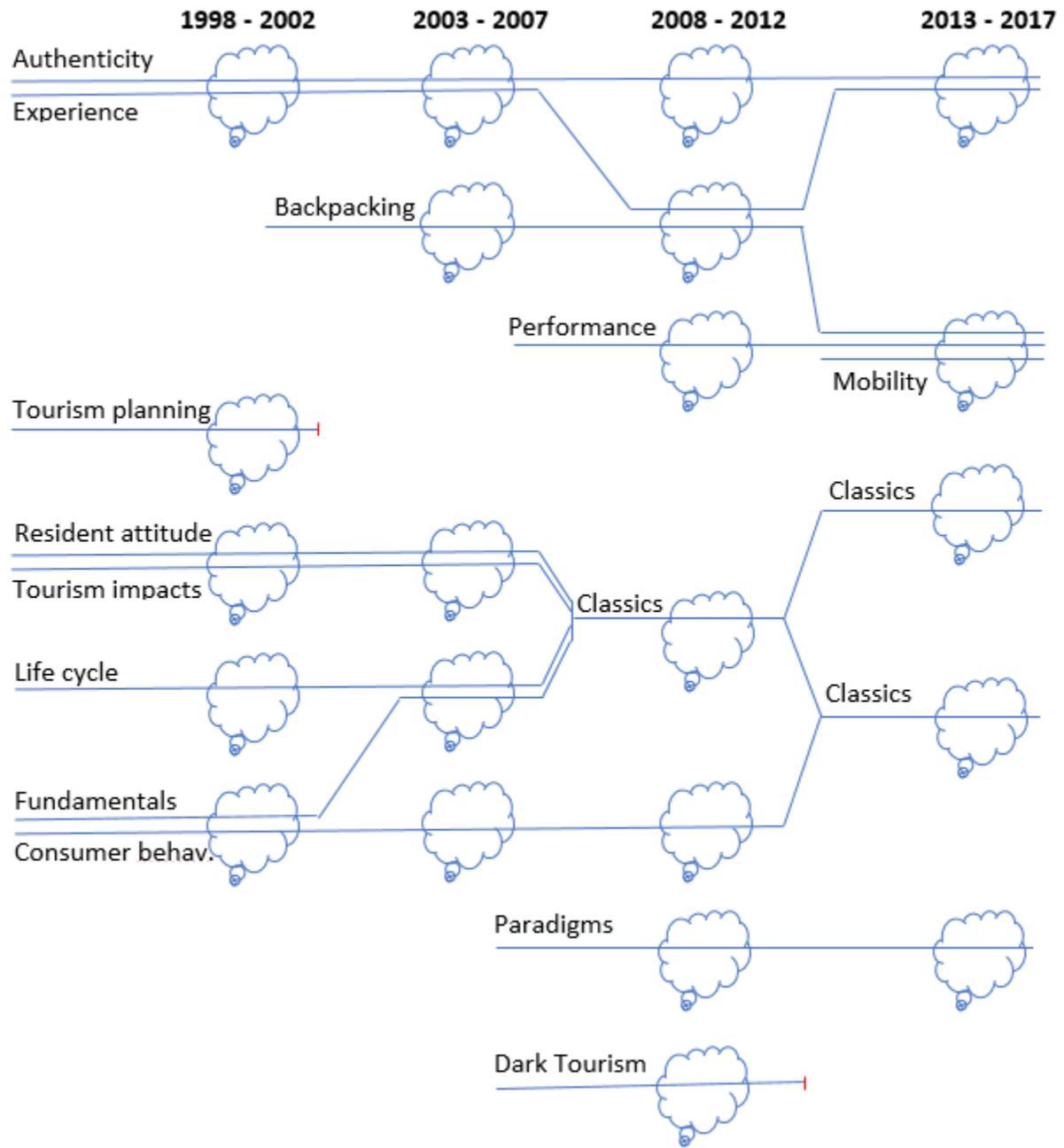
Figure 1. The evolution of source knowledge domains in/for tourism studies
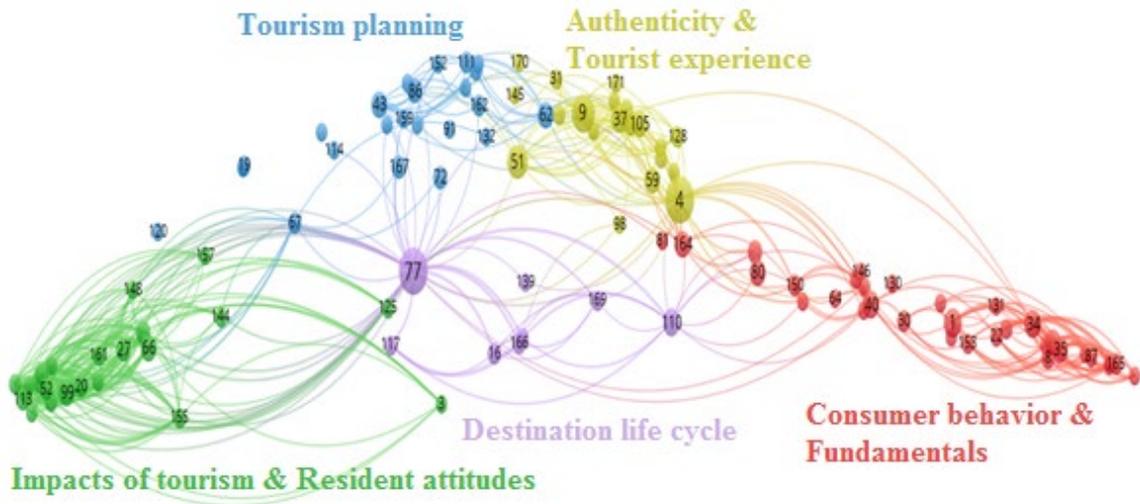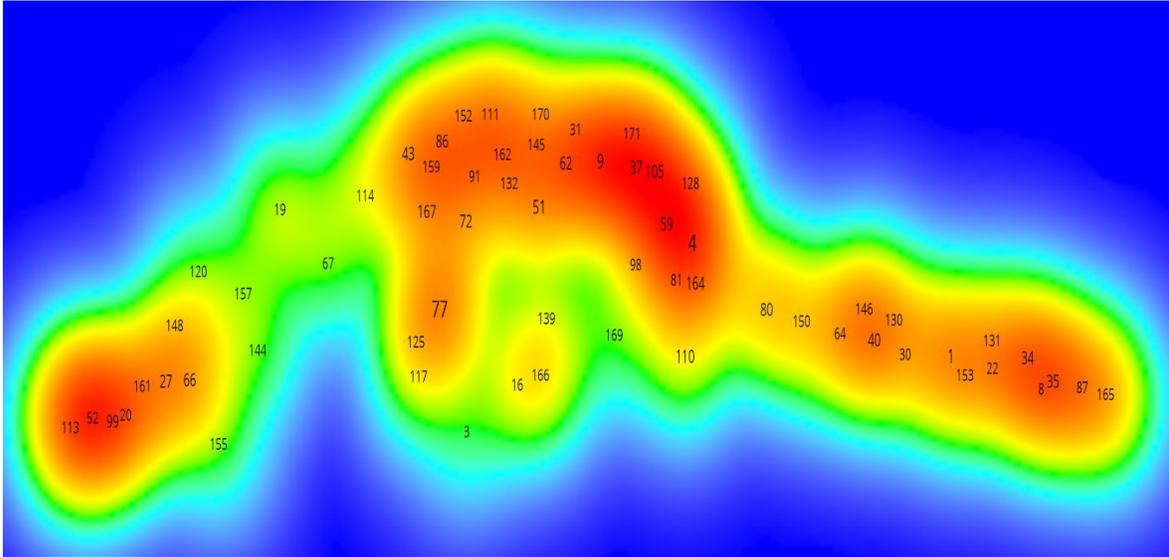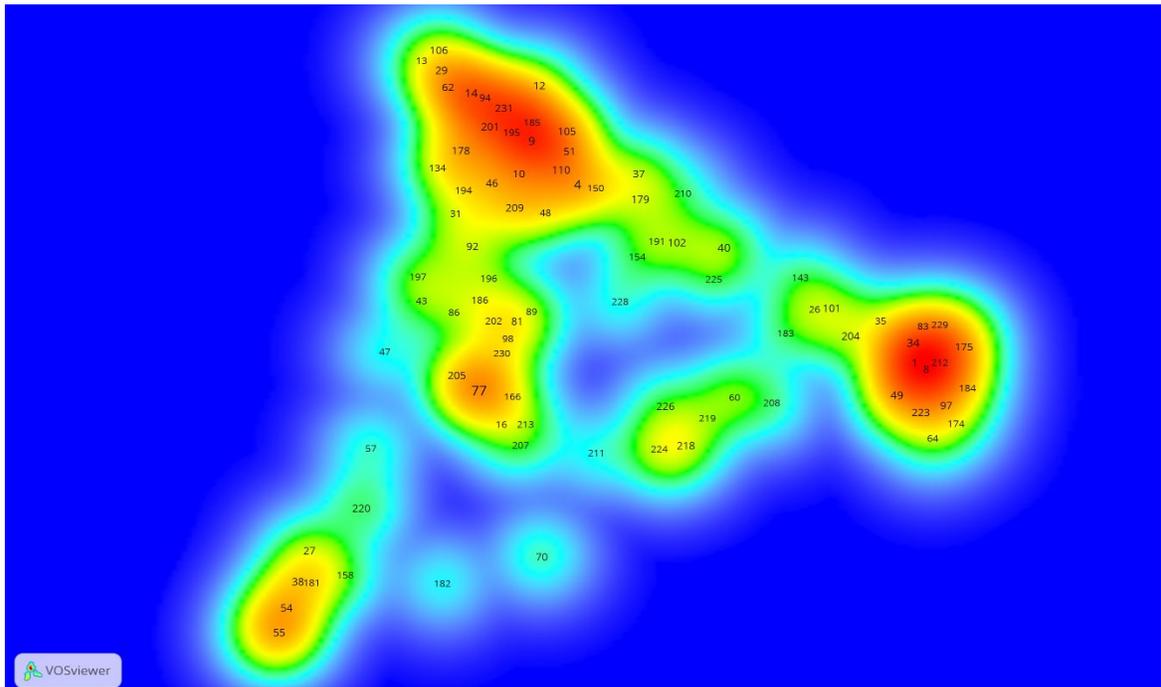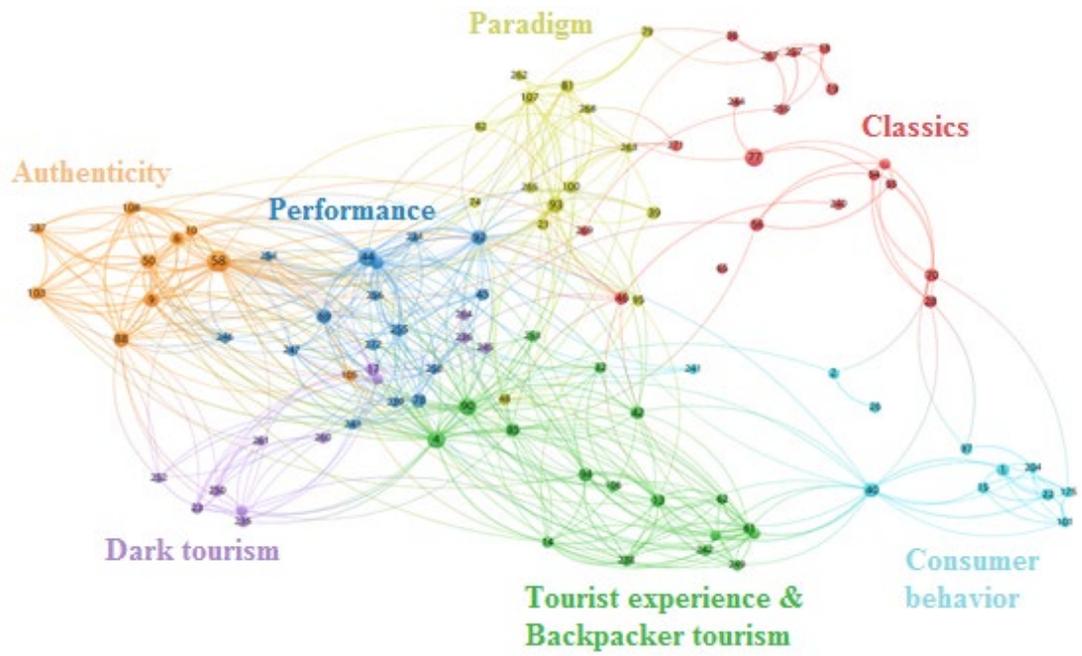
Figure 2. Intellectual connections: 1998-2002
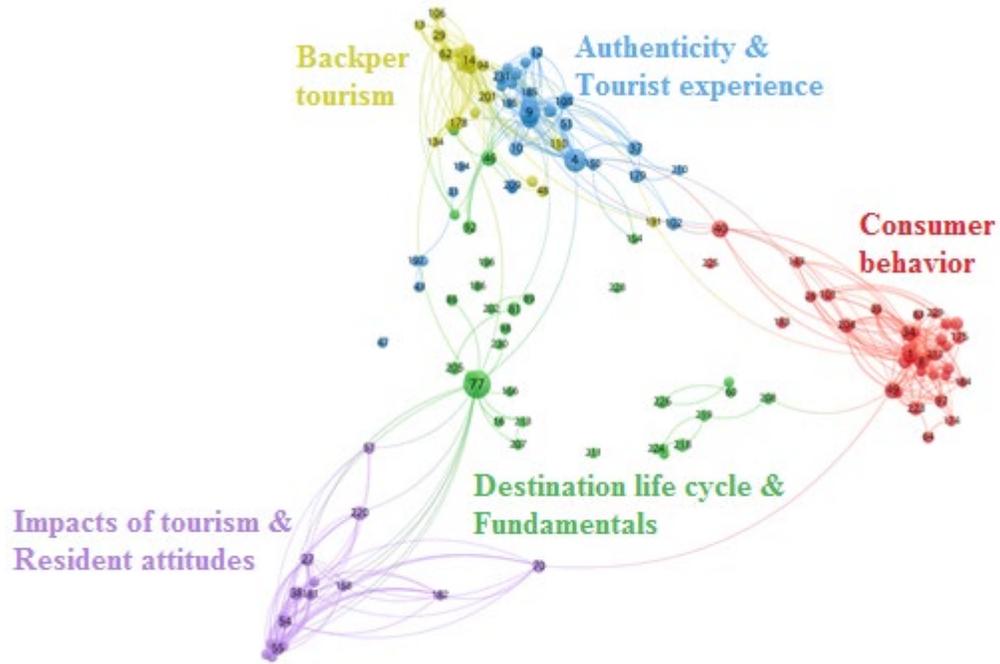
Figure 3. Intellectual connections: 2003-2007

A

Paradigm

Classics

Authenticity

Performance

Dark tourism

Tourist experience &
Backpacker tourism
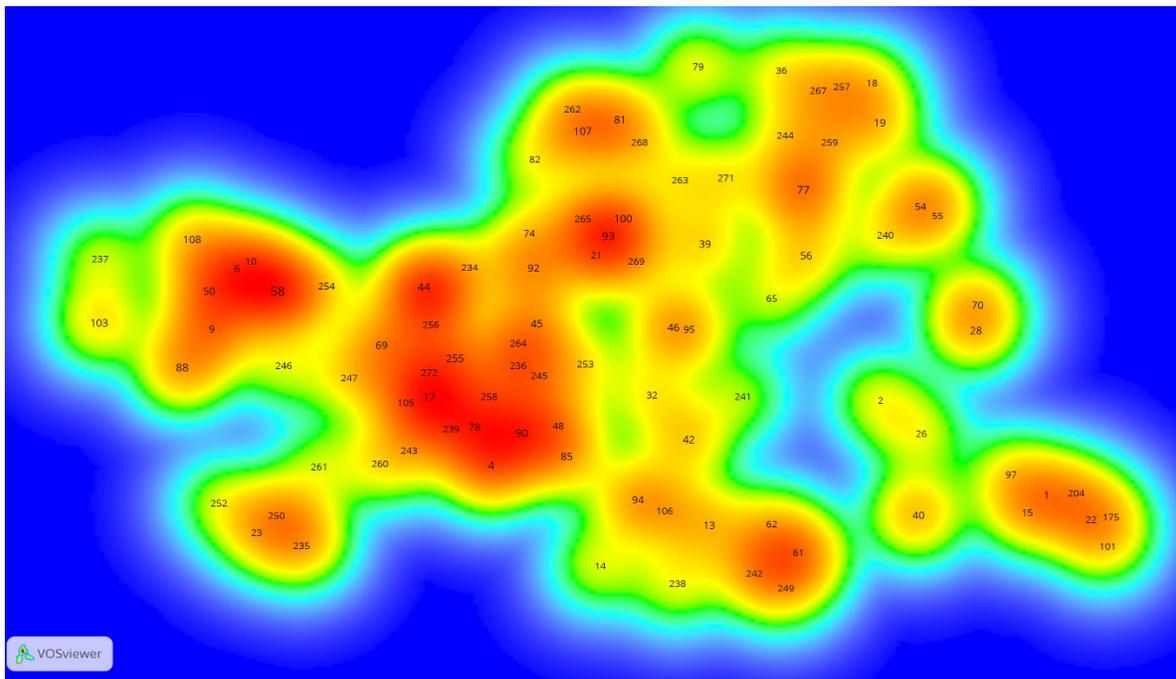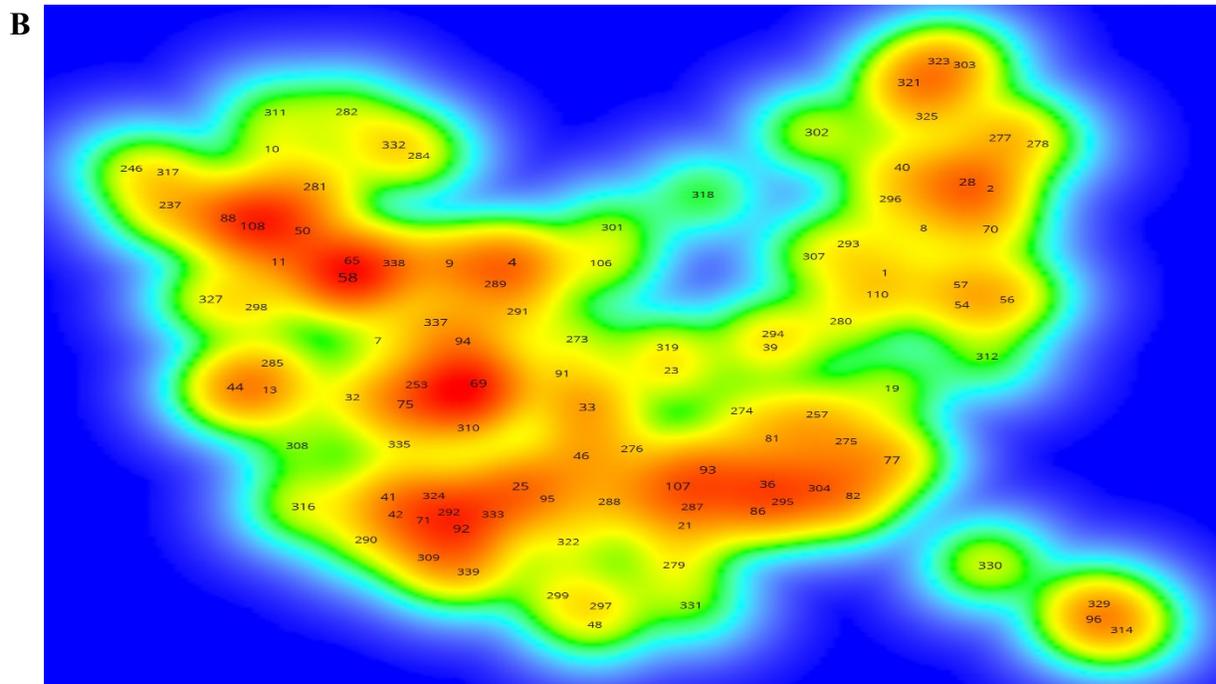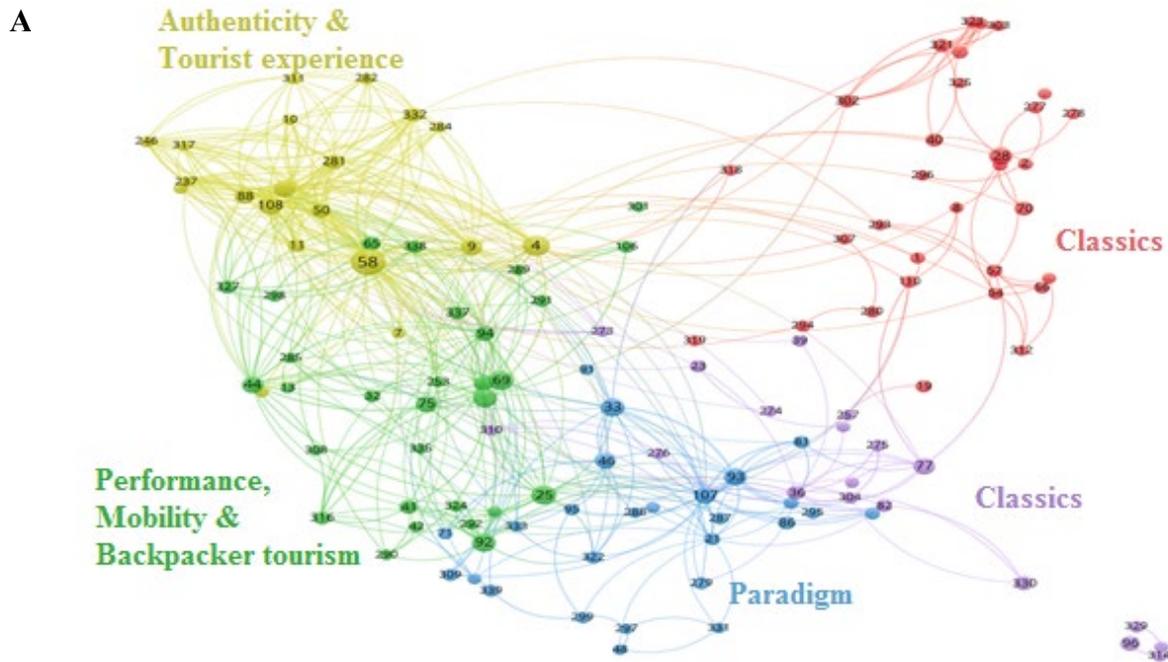
Consumer
behavior

B

Figure 4. Intellectual connections: 2008-2012

Figure 5. Intellectual connections: 2013-2017