

Cite as:

McLeod, M., Vaughan, D.R., Edwards, J. and Moital, M., 2022. Knowledge sharing and innovation in open networks of tourism businesses. *International Journal of Contemporary Hospitality Management*, (ahead-of-print).

## **Knowledge sharing and innovation in open networks of tourism businesses**

Michelle McLeod  
D. Roger Vaughan  
Jonathan Edwards  
Miguel Moital

### **Abstract:**

**Purpose** – The purpose of this paper is to examine the information flows, in terms of content and process, underpinning the sharing of knowledge by managers and owners. Such an examination reveals similarities and differences that will influence the generation and dissemination of knowledge utilized in tourism business operations and contribute to innovation.

**Design/methodology/approach** – This paper examines information flows within the theoretical and methodological framework of Social Network Analysis. The findings were derived from a quantitative study of tourism managers and owners of a tourism hub in South-West England.

**Findings** – The main finding was that network structure characteristics determine the flow of information within owners' and managers' social networks. The owners of smaller businesses received information from several sources and, therefore, had fewer structural constraints and reported larger structural holes. In comparison, the managers had more brokerage opportunities to disseminate the information within their social networks.

**Theoretical implications** – This paper highlights knowledge sharing between tourism business managers and owners in an open network structure. First, an open network structure builds innovation through the provision of non-redundant information. This is determined through the effective size of structural holes and the dissemination of information through brokerage roles. Second, the knowledge capability of a destination is built up through the social networking of managers and owners. The generation and dissemination of knowledge in a tourism destination are facilitated by the social networking activities of managers and owners.

**Practical implications** – Managers and owners of tourism businesses require knowledge through information to assist with innovative business practices. The practical implication of this is that the social networks of managers and owners have different network characteristics and that these differences result in consequences for the innovation of business practices. Another practical implication relates to the importance of managers in knowledge dissemination based on having several brokerage roles in the tourism destination.

**Originality/value** – These findings are important because an understanding of social networks and the flow of information is one of the keys to determining the influences on knowledge sharing within tourism destination knowledge networks of owners or managers and their potential contributions to innovation.

**Keywords:** tourism knowledge; inter-business; knowledge networks; structural holes; brokerage; Social Network Analysis

## **Introduction**

Knowledge sharing is required for innovation (Marasco *et al.*, 2018; Rao *et al.*, 2018; Weidenfeld *et al.*, 2010). While there has been research on knowledge sharing within businesses (Marouf, 2007), unpacking how knowledge is shared between businesses requires more exploration. Dias *et al.* (2020) found that entrepreneurs communicate their local knowledge, which contributes to innovativeness and self-efficacy because knowledge is not fully utilized unless it is transferred. Raisi *et al.* (2020) have pointed to knowledge transfer within a destination as a major underlying factor in destination competitiveness. Valeri and Baggio (2021) have noted the importance of examining the flow of information and knowledge in the collaborative structures of intermediaries in the tourism sector. Nevertheless, research focusing on intermediaries in the tourism sector contributes to understanding one aspect of destination development. Also important are the suppliers of tourism products and services, such as hotels and visitor attractions. An examination of knowledge flows in a tourism destination and the potential use of these resources is important for overall tourism destination development. This shortfall of research into if and how tourism businesses share their knowledge with other businesses through participation in social networks must be addressed.

One way through which tourism businesses gain knowledge is through the sharing of information across social networks (McLeod, 2020; Sørensen, 2007). Liebowitz (2007, p. 3) has

defined social networks as personal relationships of groups with similar interests and views social networks as essential for innovation. Valeri and Baggio (2022) have supported understanding knowledge management at the destination level. The information flows between tourism businesses may be viewed and analyzed using a network perspective. Social networks are arguably the main mechanism for the flow of information that underpins knowledge (Valeri & Baggio, 2022).

The aim of this paper is to examine the underlying influences on the effectiveness of managers and owners in obtaining shared knowledge through the flow of information from one business to the next based on network connections and the use of Social Network Analysis (SNA). The paper examines the flow of new or non-redundant information through an open network structure. Agents share knowledge content through various types of social networks (Argote & Ingram, 2000). The contributions of social networking to knowledge sharing and innovation between tourism and hospitality businesses need to be understood. Such an examination will determine any important similarities/differences that may influence the building up of knowledge utilization and innovative capability within tourism businesses.

This paper begins with an introduction that suggests social networks as a mechanism for knowledge sharing. A literature review follows with an exploration of knowledge sharing and social networks. A debate is presented as to how an open or closed network facilitates innovation. The methodology sets out the tasks involved in the data collection and analysis of Social Network Analysis. The results and discussion sections provide the main findings regarding owner and manager knowledge networks and the similarities and differences in terms of innovation. The conclusion outlines a review of the research aim and objectives. The paper ends with a discussion of the implications, limitations, and future research.

## **Literature Review**

### *Background*

The literature for this paper comes from two main bodies of academic discourse: knowledge management and social networks. Knowledge management literature provides an understanding of knowledge generation and dissemination within the tourism and hospitality industries. Social network literature from the discipline of sociology provides an understanding of not only the behavioral characteristics of individuals but also whether the ties between individuals influence their behavior. Social Network Analysis (SNA) graphically illustrates the ties that link people (agents) using systematic empirical data and mathematical and/or computational models (Freeman, 2004).

### *Knowledge sharing*

Knowledge sharing is a necessary process in the tourism sector for innovation and involves the conversion of knowledge into information. Information is sent, and data are received, and this content may be utilized at an appropriate time. Thus, knowledge diffuses through its conversion into data and information. Diffused knowledge is shared knowledge. As proposed by Parent *et al.* (2007), first, there is knowledge generation, followed by dissemination. It is upon the receipt of data and information that knowledge is formulated. Knowledge sharing means that information known to one person is made available to another (Awad & Ghaziri, 2004). This sharing may involve a two-way process. Shared knowledge is absorbed for future use. The absorptive capacity concept highlights the ability to acquire and use knowledge (Cohen & Levinthal, 1990) and, in

relation to tourism organizations' absorptive capacity, is important for understanding innovative practices (Thomas & Wood, 2015).

Davenport and Prusak (1998) have highlighted knowledge as framed by information and then incorporated with experiences in a fluid manner to provide expert insight (a.k.a. intelligence). The fluidity with which these processes occur makes understanding the processes difficult. Boisot (1998) has suggested an information space (I-space), the knowledge-building processes of which are codification, abstraction, and diffusion. This means that received information has been codified and abstracted before it was diffused. Knowledge management in tourism requires adoption and application (Cooper, 2006). Nyanga *et al.* (2019) have pointed to the importance of the ability of tourism businesses to gather, store, and use information as business intelligence to gain a competitive advantage.

Knowledge generation and dissemination are important activities for entrepreneurship (Phi *et al.*, 2017). Liebowitz (2007) has pointed to the generation and dissemination views of knowledge and suggested that knowledge is both sticky, in that it is formed within an individual, and fluid, since it flows easily from one person to another. This diffusion of information is a more pervasive concept than knowledge transfer since it is organic in that information sharing is based on mutual understanding and trust (Abrams *et al.*, 2003; Bock & Kim, 2002). The term "knowledge sharing" has been used to refer to an ongoing process based on certain inputs, outputs, and moderators (Oyemomi *et al.*, 2016).

Knowledge is a key ingredient of innovation. Networks are conduits of new knowledge, and networks position an organization to exploit that knowledge (Binder, 2019). Kim and Shim (2018) have suggested that a relationship exists between knowledge sharing, innovation, performance, and social capital. Cognitive, relational, and structural capital build network density

and influence knowledge sharing among small and medium-sized businesses in a positive way. Thus, the social capital in networks influences innovativeness and enhances competitiveness (Kim & Shim, 2018). As knowledge is shared across organizations, it may also be utilized within an organization to bring value. At an organizational level, the sharing of both tacit and explicit knowledge in business contexts contributes to performance improvement (Oyemomi *et al.*, 2016). Also, within an organization, knowledge sharing through collaboration as a facilitating condition stimulates employees' tacit and explicit knowledge (Le *et al.*, 2020). Rao *et al.* (2018) have noted the importance of knowledge sharing for service innovation in providing a competitive advantage for tourism enterprises.

### *Social networks*

Social networking is a mechanism through which information is shared, and knowledge dynamics contribute to understanding innovation in the tourism sector. Tourism researchers have explored concepts of knowledge transfer in tourism using a network perspective (Raisi *et al.*, 2020; Valeri & Baggio, 2021). Informal networks are utilized to obtain information (Ingram & Roberts, 2000; Zach & Hill, 2017). Networks are self-organized and may become more formalized with time (Davenport & Prusak, 1998). Networking explicates tacit knowledge, which is “sticky” for being derived from social interactions. Nonaka and Toyama (2003) theorized that tacit knowledge is explicated through socialization. Booyens and Rogerson (2017) explored networking for tourism innovation within small businesses as these cooperative relationships are important to the business. Social interactions contribute to knowledge-sharing activities and result in innovative practices. Raisi *et al.* (2020) have highlighted the network perspective of knowledge transfer. The nature and

extent of knowledge flows are dependent on the structures of social networks (Granovetter, 2005; Kim & Shim, 2018; Raisi *et al.*, 2020).

Social networks have a pattern or structure that determines the allocation of network resources and influences innovative capability. Certain outcomes depend on whether tourism actors engage with brokerage activities or the knowledge circulating in a network is redundant (Zach & Hill, 2017). Within networks, the agents form the structural patterns, and the structural patterns influence the actors. But not all agents are equal. Certain network positions have greater informational value based on access to information within a network (Gulati, 1998). The effects of network structure are important for the understanding of knowledge transfer within tourism destinations (Del Chiappa & Baggio, 2015; Raisi *et al.*, 2020).

The main debate in the literature is about whether closed or open structures are richer in social capital, including information. The cohesion view (Coleman, 1988) suggests that closed networks are beneficial, while Burt's (1992) structural holes view suggests that open networks have benefits. Latora *et al.* (2013) argue for a new measure called Simmelian brokerage based on previous work by Krackhardt (1999) and named after the sociologist Georg Simmel to reconcile social cohesion (closed network) and structural hole (open network) concepts of social structure. The present paper on knowledge sharing and innovation highlights Burt's (1992) structural holes, in tandem with brokerage roles (Gould & Fernandez, 1989), to illustrate the generation of shared knowledge that benefits managers and owners of tourism businesses.

Social network connections influence the generation and dissemination processes in two ways. Brokerage and structural holes within knowledge networks create certain network outcomes. Knowledge networks are mechanisms for the generation and dissemination of knowledge within a tourism destination network. Despite concerns that businesses may not share their proprietary



information (Pena, 2002), these knowledge-sharing activities need to be understood and supported. First, brokerage between social agents determines the provision of network resources (Burt, 2004). Brokerage means that network resources are passed from one agent to another. Brokerage is determined by the nature of the connections within a network. A broker is one who bridges the structural hole. There are five brokerage roles in which the focal ego can control network resources: consultant, coordinator, gatekeeper, liaison and representative (Gould & Fernandez, 1989). These brokers influence the availability and accumulation of social capital.

Second, structural holes are formed through the connections of the social actors, and these provide advantageous non-redundant network resources (Burt, 1992). A structural hole is created when a focal actor connects with others in the network to which the focal actor's alters are not connected. A focal actor receives new information through a structural hole. Burt's (1992) structural hole theory is related to Granovetter's (1983) strength of weak tie theory. Strong and weak connections are viewed in relation to the emotional intensity and intimacy and amount of time and reciprocal services (Granovetter, 1983). Granovetter (1983) argued for the advantage of weak ties as these provide new information. Strong ties provide redundant information (Granovetter, 1983). Weak ties are particularly important for supporting information flow between businesses (Friedkin, 1982).

## **Methodology**

### *Research design*

This paper uses Social Network Analysis as its theoretical and methodological framework to examine the knowledge sharing of managers and owners. Social Network Analysis (SNA) provides a set of tools illustrating nodes and ties to graphically reveal the inter-relationships, in

this case, of owners or managers. This broad research study utilized a realist approach (Knoke & Kuklinski, 1982) to define the social network boundary in geographical terms. The Bournemouth, Christchurch and Poole conurbation is the research study location. The conurbation has various types of tourism businesses for making comparisons between managers and owners. The area is a premier contiguous tourism destination with evidence of several group association networks. Members of these associations network and engage in socialization.

Social networks can be studied either as “whole” or “ego” networks (Marsden, 2005). The Bournemouth, Christchurch and Poole conurbation study was based on collecting ego-network data. An ego is a focal actor or business represented by either an owner or manager from whom important information was received. The collected one-mode data show relationships between the egos. The design did not involve egos reporting on the relationships between other egos or alters within the defined location. This would have been a cognitive approach to the relationships. However, such cognitive relationships are perceived, and perceived relationships may result in connections being absent. In addition, only the received relationship data were collected since egos would not know whether the information given would be important to the receiver.

#### *Data collection*

Within the conurbation under study, 507 possible tourism sector businesses were identified. An initial list of businesses was provided by South-West Tourism and other sources, including general hotel literature and guidebooks of local tourism departments. However, some of these businesses were not in operation or were under joint ownership or management. Because each tourism business in the conurbation could only appear once in the dataset, the network patterns observed were not influenced by the sharing of knowledge between establishments that were part of one business. Data were collected from May 2008 to February 2009. Disproportionate stratified

sampling was applied. From the 310 businesses, 200 useable questionnaires were obtained—a usable response rate 64.5% (Table 1). The drop-and-collect method was utilized and has the advantage of a high contact rate, which places pressure on respondents to complete the questionnaire (Brown, 1987).

**Table 1** Stratified Sampling Frame of Managers and owners

Tourism business	Number of businesses	Number of businesses (revised)	Respondent sample
Attractions	21	20	18
Bed and breakfast	75	60	33
Campsite and other	22	18	8
Guesthouse	55	41	23
Large Hotel	65	60	44
Self-catering businesses	211	62	40
Small Hotel	58	49	34
Total	507	310	200

The research study was designed to examine social networks of knowledge sharing between tourism sector businesses in the conurbation. This paper is based on the captured data regarding the knowledge-sharing process and content. The research instrument captured the information content via open-ended questions. This allowed for the full information content to be captured, thus warranting a mixture of methods to enrich the data. The information types were defined as the knowledge content, and the network types were defined as the process (individual/group, formal/informal). Respondents were asked to freely recall (over the last year) and list the tourism businesses within the conurbation from which they had received important business information. This is similar to the name generator instrument developed by Burt (1997). One advantage of the free recall method, as compared to the fixed choice method, relates to the former method’s ability to obtain ties that may not have been previously known to the researcher. Another advantage of

the free recall instrument is that it is more reliable (Wasserman & Faust, 1994). This reliability is enhanced by the importance or intensity of the relationship (Marsden 1990 in Wasserman & Faust, 1994). The free recall method supports content validity since there are no limits to the number of businesses that can be named. The questionnaire also asked the respondent to list any other businesses not previously named.

Innovation in the research design was the categorization of the various types of interactions resulting in information-sharing connections: formal, informal, group and individual. The number of times an ego (owner or manager) received important information from an alter within these four network types determined the ego-network's interconnectivity and also whether the ties were strong or weak. Thus, by testing the ties within these four network types, convergent validity was achieved. In addition, by collecting both individual and group network data, discriminant validity was achieved. Convergent validity means similar alter data were obtained within the different network types, while discriminant validity means that managers and owners perhaps differed in social networking practices, particularly group and individual social networking activities.

### *Data analysis*

The identification of egos within social networks was also important. UCINET 6 software and NetDraw developed by Analytic Technologies were utilised (Borgatti, 2002; Borgatti *et al.*, 2002). Social network analysts utilize artificial boundaries (Christopoulos & Aubke, 2014). In this case, a bounded area was identified using postal codes. Each node in a social network represents an ego label—for example, BSH01 (Bournemouth Small Hotel 01). At the end of the node's identifier is a unique number distinguishing one node of the same location and type from another (McLeod *et al.*, 2010). Unique numbers were also assigned based on the businesses' postal codes. Thus,

BSH01 would be near BSH02 except in cases where the particular type of business (a small or large hotel) was located in another area, as was the case between the East and West Cliff of Bournemouth.

A linked list was created using a Data Language (DL), with the manager or owner stated first and alters after. Once the DL file was imported, the structural hole measures were calculated and then applied to the node and label sizes. This was done to comparatively illustrate the more important nodes, based on a structural hole measure, and ties within the main component network structures. Thereafter, the data were analyzed to determine the patterns of information flows, the number and size of structural holes, and the brokerage roles using structural holes and brokerage measures.

More tourism research studies utilizing Social Network Analysis (SNA) as theory and methodology are needed to unravel and advance knowledge in tourism (van der Zee & Vanneste, 2015). This paper unravels a difficult-to-understand process of knowledge sharing in an inter-business context, analyzing the knowledge-sharing similarities and differences between managers and owners in the next section.

## **Results**

### *Information flows*

The interconnections of the owners' and managers' networks were revealed. This mapping illustrated the knowledge-sharing connections within the tourism destination. Social networking is a mechanism for knowledge sharing, which is a precursor of innovation. Innovation is built up through "structural holes" as potential sources for new information, and the type of brokerage involved facilitates the disseminative capacity to improve the receipt of information. Thus, it is

posited that innovative practices in inter-business knowledge networks are facilitated by the structural hole and brokerage role characteristics.

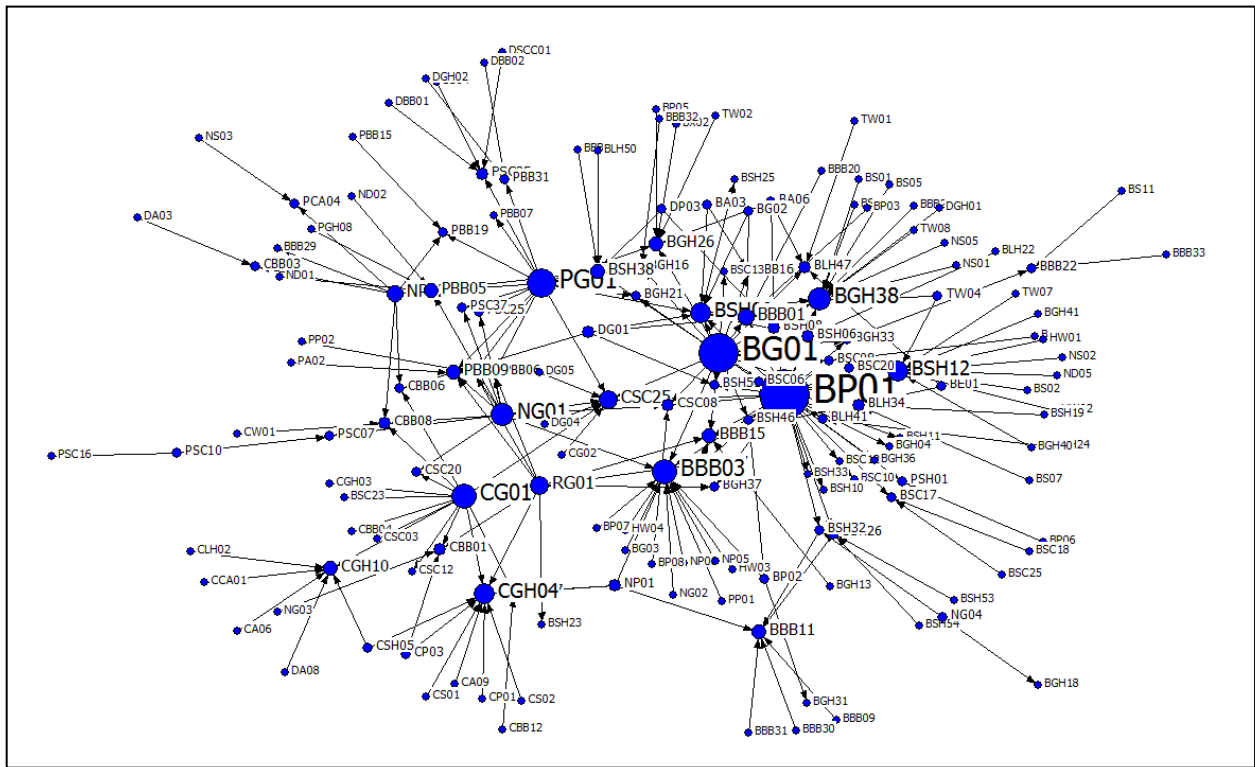
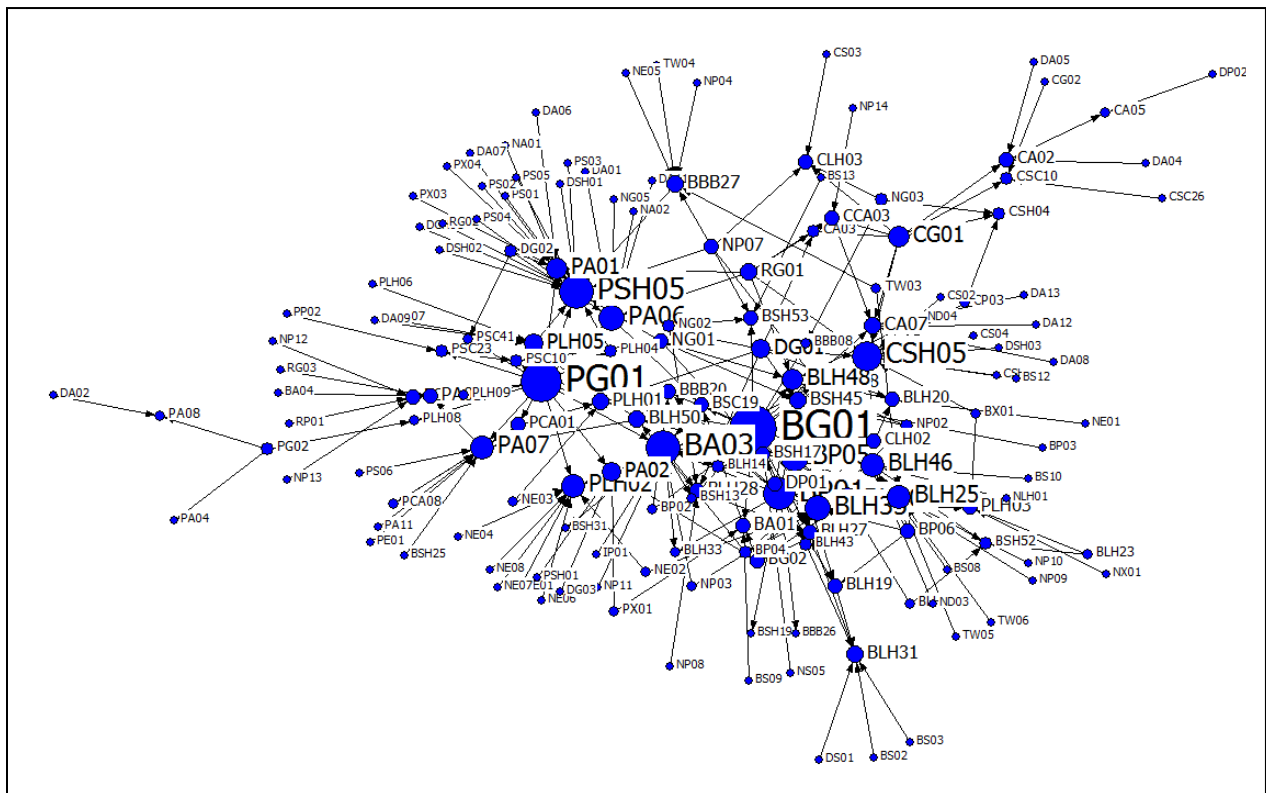


Figure 1 Owners' Information Connections



**Figure 2** Managers' Information Connections

The above diagrams illustrate the owners' and managers' knowledge networks with evident interconnections across the conurbation (Figures 1 and 2). The position of each node is based on the information received from either owners or managers in other businesses, not their own. The lines show a flow from one node to the next with an arrow indicating the direction of the information flow. The node sizes were adjusted based on the structural hole measure. Therefore, different node sizes represent a greater receipt of knowledge that was shared.

The visual evidence reveals two main connectivity gaps: one within the owners' knowledge network and one within the managers' knowledge network. The hospitality actors within the owners' knowledge network may have greater innovative potential as a result of having two areas of non-redundant contacts through which new information can potentially flow. For example, two self-catering establishments in Christchurch (egos CSC08 and CSC25) and one Bournemouth bed and breakfast property (BBB03) are in a network position that connects the Poole and Bournemouth owners within the owners' knowledge network (Figure 1). Within the managers' knowledge network, the main component of those egos that spanned the geographical boundaries between Bournemouth and Poole were attractions (BA03, PA02) and large hotels (PLH01, BLH50) in Poole (Figure 2). Egos who potentially benefited from a network position between Poole and Bournemouth managers were PSH05, PA06, PLH01, PLH04, and PLH05, and in Bournemouth, BLH50, BBB20, and BSC19. Although a visual of the networks provides insights into the flow of information within the destination, further analysis is necessary to understand potential innovative capacity.

A structural hole is the number of ties an ego has, minus the average number of alter ties (Hanneman & Riddle, 2005). Although there was one main area of generative capacity, the maximum structural hole size of an ego in the owners' knowledge network was 16.76% less than that in the managers' knowledge network (see note in Table 2). These results clarified access to knowledge resources based on the positions of owners or managers, implying that the position of owner requires certain networking actions in individual/group or formal/informal social networks to improve innovative capability. As theorized by Burt (1992), an actor in a structural hole receives information that others do not have access to because they are not connected to it. They obtain non-redundant or new information, which becomes a source of innovation.

**Table 2** Tourism Businesses Maximum Structural Hole

<b>Tourism Businesses</b>	<b>Owners Maximum</b>	<b>Managers Maximum</b>
Attractions	3.000	11.000
Bed and breakfast properties	13.000	5.667
Campsite	2.000	4.000
Guesthouses	11.735	1.000
Large hotels	4.071	9.500
Self-catering businesses	8.000	3.286
Small hotels	11.000	15.618
<b>HIGHEST</b>	13.000	15.618

*Note: The figure of 13.000 is 16.76% less than 15.618.*

Source: Authors

A constraint measure clarifies access to network resources. An ego with more than one information source is less constrained (Hanneman & Riddle, 2005). The level of constraint was measured using the maximum and minimum values achieved for each business category in the owners' and managers' knowledge networks. As managers and owners interact and share knowledge, this enterprising behavior reduces the level of constraint. The use of more information resources improves innovative capacity.



**Table 3** Tourism Businesses Maximum and Minimum Constraint

<b>Tourism Businesses</b>	<b>Owners</b>		<b>Managers</b>	
	Maximum	Minimum	Maximum	Minimum
Attractions	1.000	0.375	1.000	0.101
Bed and breakfast properties	1.125	0.086	1.000	0.251
Campsite	1.000	0.500	1.125	0.250
Guesthouses	1.000	0.128	1.000	1.000
Large hotels	1.000	0.185	1.125	0.124
Self-catering businesses	1.000	0.139	1.000	0.375
Small hotels	1.000	0.101	1.000	0.095
<b>HIGHEST/LOWEST</b>	1.125	0.086	1.125	0.095

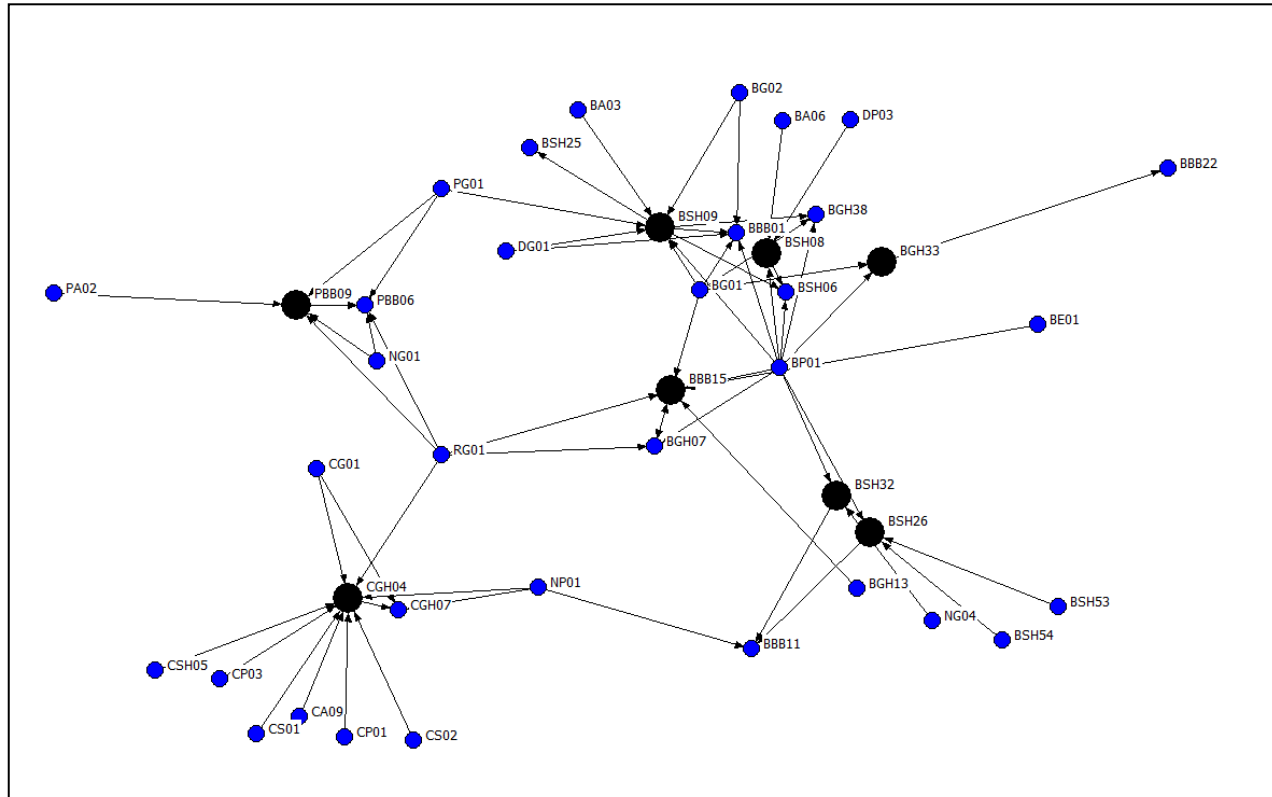
Source: Authors

Small hospitality businesses engaged with more enterprising behavior as bed and breakfast properties recorded a minimum constraint value of 0.086 (Table 3). The managers' knowledge network attractions and small hotel establishments recorded the lower constraint values. Owners in smaller properties were less constrained and had more potential sources of information.

### *Brokerage*

Brokerage is another indicator of innovative potential. A broker is an intermediary and in this case shares knowledge with others in the network. According to Gould and Fernandez (1989) there are five (5) brokerage roles that act in the sharing of network resources: consultant (sharing resources between two), coordinator (sharing resources within the same group), gatekeeper (control resource access), liaison (interconnect two groups) and representative (a group contact point). The brokerage roles of managers and owners were calculated by analyzing the knowledge networks'

main components via the Gould and Fernandez item in UCINET 6 software (Borgatti *et al.*, 2002). To compare the brokerage results, the brokerage scores were partitioned by the relative brokerage.



**Figure 3** Consultant Owners (Larger Nodes)

The brokerage roles in the owners' and managers' knowledge networks were compared. The owners' knowledge network contained eight consultants who shared knowledge between two other business persons (Figure 3). Examples include BBB15 consultant potential brokering between RG01 and BGH07, and BSH26 consultant potential brokering between BSH54 and BBB11. The owners who were in small properties were particularly consultants in the knowledge network.

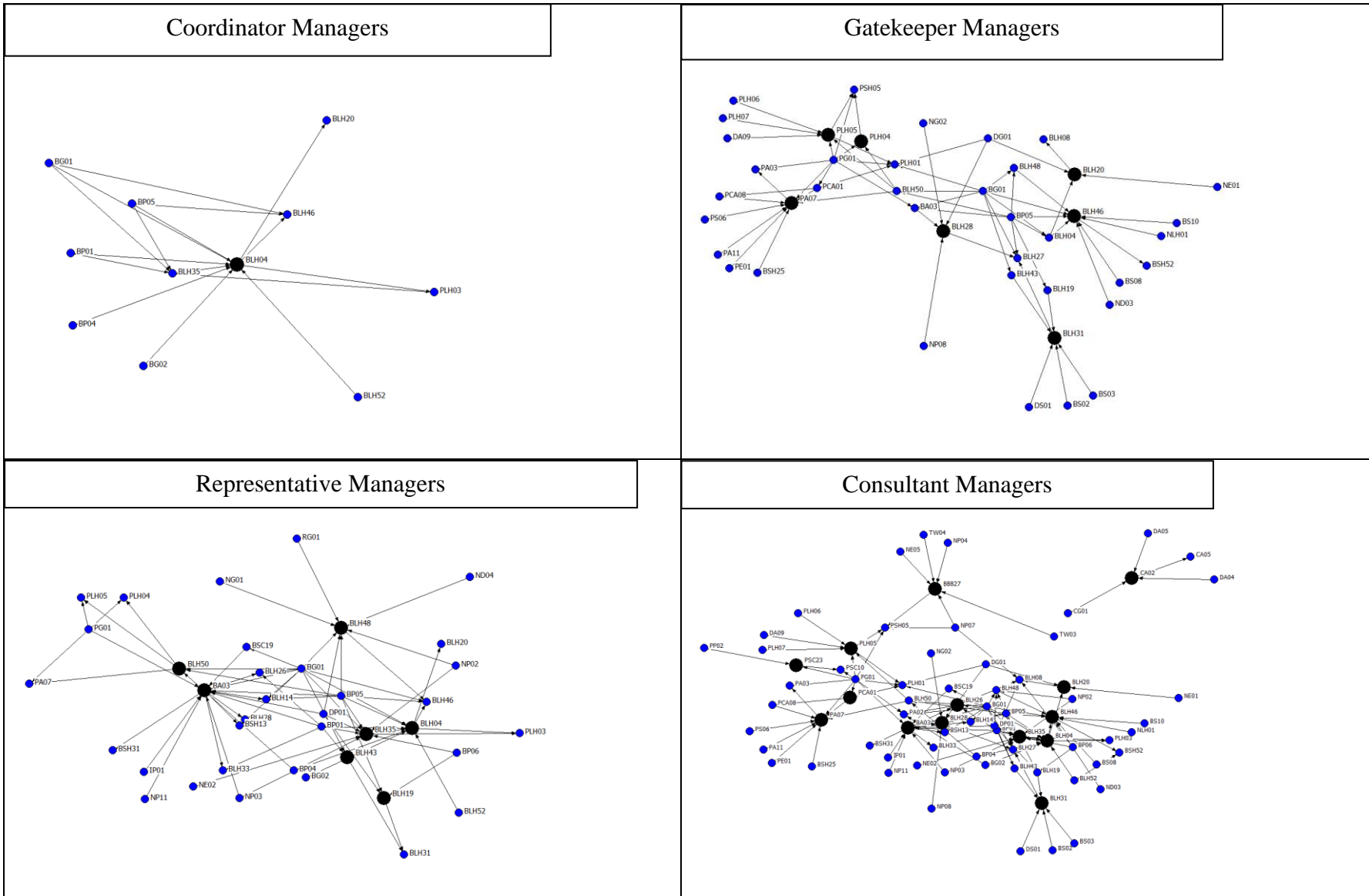


Figure 4 Managers Brokerage Roles

Managers performed several brokerage roles including consultant, coordinator, gatekeeper and representative (Figure 4). One brokering manager could share resources between 15 other agents in the network and was a point of contact for 5 agents in the group. Brokerage facilitates tourism business innovation. Managers were also gatekeepers because they belonged to a different group and could potentially control shared information. Six gatekeepers also performed the consultant role and, therefore, rather than limit the flow of information, these gatekeepers allowed information to flow. Clearly, some managers, based on their brokerage roles, were disseminators of knowledge within the tourism destination as compared to the relatively few owners who brokered knowledge. In addition, some managers were able to access knowledge from different sources based on larger structural holes' effective sizes in their knowledge networks.

**Table 4** Examples of Types of information Received by Managers and owners

<b>Position</b>	<b>Social Networks</b>	<b>Technical</b>	<b>Managerial</b>	<b>Strategic</b>	<b>Local</b>
<b>Owners</b>	Individual Business	Advertising	Operation procedures	Competitor pricing	What type of trade (e.g., couples, businessmen)
	Individual Personal	General advice on effective advertising	Booking and payment systems	Town Centre Master Vision and new government regulations	From other people about their businesses
	Group Formal	Advice handling difficult guest situations	Budgeting	National/local statistics	Local events information
	Group Informal	Website improvement and use	Legal documents	Upcoming activities at attractions, events, exhibitions and meetings	Visions for Poole; Increasing tourism and Visions for 2012 Olympics
<b>Managers</b>	Individual Business	Websites	Restaurant cost and training	Visitor statistics	Advertising attractions and events
	Individual Personal	Where staff were being recruited from	Marketing strategies and budgeting	New business markets	Businesses having difficulties
	Group Formal	Planning and policing	Health and safety information	Visitor numbers to the conurbation	Warnings about problematic guests

	Group Informal	Advertising	Managing collections	Crime alerts and/or security	Average room rate and room occupancy
--	----------------	-------------	----------------------	------------------------------	--------------------------------------

While the structure of the network can influence the outcomes of shared knowledge, equally important is the type of information shared. Respondents were asked to categorize the information they received into four types (local, managerial, strategic, and technical) within four social network channels. Table 4 shows examples of the information types received based on the number of similar responses or meaningfulness if there was only one response. Although respondents indicated that they received these various types of information that does not mean that these were new knowledge resources or that this information flowed across the network. Structural holes and brokerage analyses are needed to understand these dynamics.

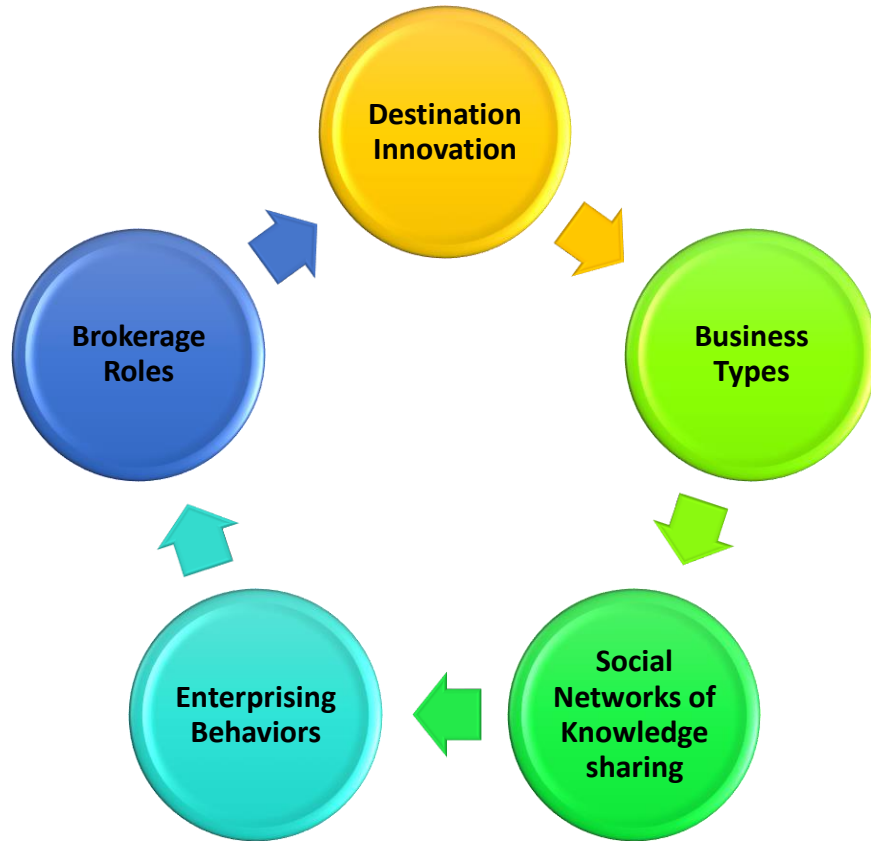
## Discussion

Inter-business knowledge-sharing network processes are particularly important for smaller tourism businesses (Cooper, 2006; Nyanga *et al.*, 2019; Stare & Križaj, 2018). By understanding the mechanisms of inter-business knowledge sharing to facilitate innovative potential, these mechanisms can be re-structured, resulting in greater innovative practices and more competitive and profitable tourism businesses. The findings of this paper provide valuable insights into measures of structural holes and brokerage roles as indicators of the effectiveness of knowledge sharing. The inter-business relationships resulting in knowledge sharing were based on social networking; however, the various sizes of the businesses resulted in differences in the receipt of knowledge. Also, the nature of brokerage opportunities was revealed by a micro-analysis of owners' and managers' social networks.

Social networking facilitates the sharing of knowledge, which is a form of social capital, and knowledge resources improve business performance when these resources are applied

(Bouncken & Pyo, 2002). Booyens and Rogerson (2017) note the importance of networked collaboration when faced with the difficulties of growing a tourism business and improving customer offers. With the dissemination of knowledge within a tourism destination, the competitiveness of that destination will be strengthened. Therefore, social networking within a tourism destination should be encouraged. The enterprising behavior of the managers in the managers' knowledge network allowed the sharing of information across various businesses, creating less constraint for the attraction and small hotel business types.

Brokerage is an important concept and supports innovation (Valeri & Baggio, 2021). Abernathy and Clark (1985) suggest that innovative practices are built through the acquisition, transfer, and use of information. The social networking practices of managers resulted in several brokerage roles being performed. Gatekeepers, who are also consultants, could be key innovation drivers in the managers' knowledge networks through enterprising behavior. Firms form innovation partnerships with tourism firms that have higher brokerage value (Zach & Hill, 2017). Based on the various brokerage roles that managers engaged with, the capacity for innovation was enhanced. The existence of a tourism destination network may be a reasonable explanation for the functioning of an inter-business knowledge network. Connections within a social network of knowledge sharing have been revealed, and social interaction processes provide opportunities to obtain brokered information resources.



**Figure 5** Tourism Destination Innovation

Tourism destination knowledge networks contribute to innovation processes. However, the extent to which these processes are effective depends on several components within the destination. A construct of tourism destination innovation is illustrated in Figure 5. First, the types of businesses that exist will influence the innovation process. The composition of the number of small and large tourism businesses will determine whether these are managed by owners or employees. Second, owners' and managers' social networking activities, whether formal or informal, group or individual, influence knowledge sharing as these create different opportunities for knowledge to be shared. Third, enterprising behavior, linked with knowledge generation and knowledge dissemination, occurs through social networking activities. Fourth, brokerage facilitates innovative practices through the receipt of new information. Tourism destination innovation has to be

understood as a created process built up through the components of business type, social networking, enterprising behavior, and brokerage. In theory, a tourism destination with small establishments that are owner managed may be more innovative than one with large establishments. On the one hand, while managers are disseminators of knowledge, the content of that knowledge may be redundant, thus limiting innovation. On the other hand, opportunities to cross-fertilize managers, as knowledge disseminators, in the owners' knowledge networks are particularly important.

## **Conclusion**

This paper has achieved its aim to examine the underlying influences on the effectiveness of owners' and managers' acquisition of knowledge in open network structures. Tourism businesses require knowledge to improve their business operations, and managers and owners contribute to knowledge sharing in different ways. Information flows contribute to knowledge, and through those connections, managers and owners acted as conduits of knowledge sharing across the study area. The characteristics of the network structure also determined the sources of new or non-redundant information that contributes to innovation. Inter-organizational socialization creates opportunities for destination innovation, and these socialization processes continue as a result of the value gained from networks (Milwood & Roehl, 2018). This paper supports innovation being assisted through a socialization process, although the extent of innovation depends on certain network characteristics. Arguably, the knowledge-sharing activities in both networks enabled potential innovation through the extent of brokerage and structural hole sizes. However, the smaller owner-managed and larger manager-led tourism businesses were more likely to enable innovation.



The value of knowledge relates to its sharing. Tourism businesses sharing their knowledge performed certain brokerage roles that resulted in the exchange of information based on their enterprising behavior. On the one hand, managers' knowledge networks were brokerage rich as information was being shared between intermediaries or bridges of actors therein. The brokerage of knowledge contributes to the spread of information within a destination. Managers have knowledge about the operation of tourism businesses, and by brokering that knowledge, the tourism destination benefits overall. On the other hand, owners' knowledge networks showed one brokerage role between owners in small properties: that of consultant. While one consultant can contribute to knowledge brokerage, greater knowledge dissemination between owners in the destination is needed. As the owners are the investors in tourism products and services, such limits to knowledge sharing could affect overall destination innovation.

This paper illustrates through the application of SNA that inter-business knowledge sharing exists and that shared knowledge potentially contributes to tourism business operations based on the content shared through the knowledge network. Knowledge content may be collected as qualitative data. Qualitative data support network analysis elucidation (Mariani & Baggio, 2020). The range of technical, managerial, strategic, and local knowledge resources (Table 4) shows how tourism businesses are learning within the destination as these businesses produce tourism products and services. Local knowledge contributes to innovativeness and self-efficacy (Dias *et al.*, 2020), further supporting the idea that inter-organizational networks build innovative capability as network actors are enabled to implement innovations. For owners, local knowledge included information about trade, while for managers, local knowledge included information about the average room rate and room occupancy in the destination. In addition, owners learned about advertising, website development, booking systems, competitor pricing, and destination vision.

Managers learned about staff recruitment, marketing strategies, visitor statistics, and unsuitable guests. Such information may innovate marketing plans for businesses. Knowledge required for tourism business operation was being shared, and this contributed to the development of innovative business practices, strategies, and policies in the tourism destination.

Overall, this paper has challenged the idea that knowledge sharing is simply an intra-organizational process that benefits those working within the organization and illustrates that within the tourism industry, knowledge sharing is an inter-business process with key knowledge resources utilized in business operations being shared across destination knowledge networks of managers and owners. The creation of knowledge networks with structural holes and brokerage roles illustrates the value to be gained from open network structures as compared with closed network structures.

### **Theoretical implications**

An overarching theoretical implication is that the enterprising behavior and brokerage of tourism managers and owners facilitated access to information. As theorized by Burt (1992), structural holes provide a competitive advantage through the flow of non-redundant or new information. Based on this paper, new information generated new knowledge content, and this is an innovation advantage for a tourism business. Owners of smaller businesses received information from several sources and, consequently, recorded larger effective structural holes. Network structures with larger effective structural holes were dependent on the size of the property. In the case of managers, the larger properties had structural holes of larger effective sizes, and in the case of owners, the smaller properties had larger effective structural holes. This suggests that owner-managed

properties may have greater innovative capability than larger properties, although this innovative capability may be hampered by insufficient brokerage.

In theory, knowledge is seen as a competitive advantage and not shared with other competitors. Organizations may facilitate knowledge transfer internally and prevent the external transfer of knowledge (Argote & Ingram, 2000). Nonetheless, another theoretical implication is that the key to knowledge sharing outside the business is social networking. Social networks are sources of information utilized in businesses, and the differences in knowledge sharing across owners' and managers' networks contribute to the innovation capacities of knowledge generation and dissemination. A network with the greater generative capacity and rich in effective structural holes may become innovative, although that innovative capacity may be concentrated and not spread throughout the network in the presence of limited disseminative capacity and brokerage opportunities. Structural holes and brokerage opportunities are two sides of the same coin, and both are to be examined to determine potential innovative capacity within a tourism destination.

### **Practical implications**

One practical implication is that the content of knowledge and the process through which this knowledge is shared have been revealed. The Bournemouth, Christchurch and Poole conurbation case study illustrates that social networking is a mechanism for knowledge sharing. SNA contributes to advancing methodology about knowledge flows across a geographical area. Knowledge generation by receipt of new ideas and knowledge dissemination through brokerage have substantial benefits for a tourism destination based on the content of said knowledge. By identifying the technical, managerial, strategic, and local knowledge content shared within the

owners' and managers' networks, tourism destination planners and managers have a better understanding of the tourism destination's knowledge needs. Knowledge is needed for innovation to give tourism businesses a competitive advantage.

Another practical implication is that since social networking is a mechanism of knowledge sharing within a tourism destination, these social networks have to be built up through the managers and owners obtaining value from their social networks. Because the extent to which knowledge will be shared relates to the social networking activities over time, improving social networking will enhance destination innovation. The social networking activities were categorized based on individual/group and formal/informal, and these are the mechanisms through which knowledge was shared. The tourism destination could review opportunities to social network and share knowledge based on these mechanisms, developing strategies to improve social networking activities.

### **Limitations and Future Research**

This paper provides an analysis of the information flows of managers and owners based on social networking activities outside the confines of the business. Information-sharing activities that occur within the businesses were not gathered. Employees may share information obtained from outside the business that may contribute to innovation. This paper examined an open network structure to determine its effective contribution to innovation. Understanding knowledge sharing within a tourism destination may be examined further under various conditions based on the types of social networks. Tourism businesses are faced with ongoing challenges to operate, and inter-business knowledge dynamics assist with the management of these businesses. A linking of those

information flows outside of the business with those inside of the business will further clarify innovative capability and determine the usefulness of certain types of networking practices.

## Acknowledgements

The data for this paper was derived from a Ph.D. research study that was fully funded by Bournemouth University in the United Kingdom. Based on the Ph.D. research study, two previous papers have highlighted the application of Social Network Analysis. The authors express thanks to the Reviewers and Editors of this paper.

## References

- Abernathy, W. J., & Clark, K. B. (1985). Innovation: Mapping the winds of creative destruction. *Research policy*, 14(1), 3-22.
- Abrams, L. C., Cross, R., Lesser, E., & Levin, D. Z. (2003). Nurturing interpersonal trust in knowledge-sharing networks. *Academy of Management Executive*, 17(4), 64-77.
- Argote, L., & Ingram, P. (2000). Knowledge transfer: A basis for competitive advantage in firms. *Organizational Behavior and Human Decision Processes*, 82(1), 150-169.
- Awad, E. M., & Ghaziri, H. M. (2004). *Knowledge management* (International ed. ed.). Upper Saddle River, N.J. : Pearson/Prentice Hall.
- Binder, P. (2019). A network perspective on organizational learning research in tourism and hospitality: A systematic literature review. *International Journal of Contemporary Hospitality Management*, 31(7), 2602-2625.
- Bock, G. W., & Kim, Y.-G. (2002). Breaking the myths of rewards: An exploratory study of attitudes about knowledge sharing. *Information Resources Management Journal*, 15(2), 14-21.
- Boisot, M. (1998). *Knowledge assets : securing competitive advantage in the information economy*. Oxford: Oxford University Press.
- Booyens, I., & Rogerson, C. M. (2017). Networking and learning for tourism innovation: evidence from the Western Cape. *Tourism Geographies*, 19(3), 340-361.
- Borgatti, S. P. (2002). Netdraw Network Visualisation. Harvard, MA: Analytic Technologies.
- Borgatti, S. P., Everett, M. G., & Freeman, L. C. (2002). Ucinet for Windows: Software for Social Network Analysis. Harvard, MA: Analytic Technologies.
- Bouncken, R. B., & Pyo, S. (Eds.). (2002). *Knowledge Management in Hospitality and Tourism*. Binghamton, United States Haworth Press, Inc.
- Burt, R. S. (1992). *Structural holes : the social structure of competition*. Cambridge, MA: Harvard University Press.

- Burt, R. S. (1997). The Contingent Value of Social Capital. *Administrative Science Quarterly*, 42(2), 339-365.
- Burt, R. S. (2004). Structural Holes and Good Ideas. *The American Journal of Sociology*, 110(2), 349-399.
- Christopoulos, D., & Aubke, F. (2014). Data collection for social network analysis in tourism research. In *Knowledge networks and tourism* (pp. 140-156). Oxon: Routledge.
- Cohen, W. M., & Levinthal, D. A. (1990). Absorptive Capacity: A New Perspective on Learning and Innovation. *Administrative Science Quarterly*, 35(1), 128-152.
- Coleman, J. S. (1988). Social Capital in the Creation of Human Capital. *The American Journal of Sociology*, 94(Supplement), S95-S120.
- Cooper, C. (2006). Knowledge management and tourism. *Annals of Tourism Research*, 33(1), 47-64.
- Davenport, T. H., & Prusak, L. (1998). *Working knowledge : how organizations manage what they know*. Boston, Mass.: Harvard Business School Press.
- Del Chiappa, G., & Baggio, R. (2015). Knowledge transfer in smart tourism destinations: Analyzing the effects of a network structure. *Journal of Destination Marketing & Management*, 4(3), 145-150.
- Dias, Á., Silva, G. M., Patuleia, M., & González-Rodríguez, M. R. (2020). Developing sustainable business models: Local knowledge acquisition and tourism lifestyle entrepreneurship. *Journal of Sustainable Tourism*, 1-20.
- Freeman, L. C. (2004). *The Development of Social Network Analysis: a study in the sociology of science*. Vancouver: Empirical Press.
- Friedkin, N. E. (1982). Information flow through strong and weak ties in intraorganizational social networks. *Social Networks*, 3(4), 273-285.
- Gould, R. V., & Fernandez, R. M. (1989). Structures of Mediation: A Formal Approach to Brokerage in Transaction Networks. *Sociological Methodology*, 19, 89-126.
- Granovetter, M. (1983). The Strength of Weak Ties: A Network Theory Revisited. *Sociological Theory*, 1, 201-233.
- Granovetter, M. (2005). The Impact of Social Structure on Economic Outcomes. *The Journal of Economic Perspectives*, 19(1), 33-50.
- Gulati, R. (1998). Alliances and networks. *Strategic Management Journal*, 19(4), 293-317.
- Hanneman, R., & Riddle, M. (2005). *Introduction to Social Network Methods*. Riverside: University of California.
- Ingram, P., & Roberts, P. W. (2000). Friendships among Competitors in the Sydney Hotel Industry. *The American Journal of Sociology*, 106(2), 387-423.
- Kim, N., & Shim, C. (2018). Social capital, knowledge sharing and innovation of small-and medium-sized enterprises in a tourism cluster. *International journal of contemporary hospitality management*, 30(6), 2417-2437.
- Knoke, D., & Kuklinski, J. H. (1982). *Network analysis*. Beverly Hills, Calif.; London: Sage.
- Krackhardt, D. (1999). The ties that torture: Simmelian tie analysis in organizations. *Research in the Sociology of Organizations*, 16(1), 183-210.
- Latora, V., Nicosia, V., & Panzarasa, P. (2013). Social cohesion, structural holes, and a tale of two measures. *Journal of Statistical Physics*, 151(3), 745-764.
- Le, P. B., Lei, H., Le, T. T., Gong, J., & Ha, A. T. (2020). Developing a collaborative culture for radical and incremental innovation: the mediating roles of tacit and explicit knowledge sharing. *Chinese Management Studies*, 14(4), 957-975.

- Liebowitz, J. (2007). *Social networking : the essence of innovation*. Lanham, Md. ; Plymouth, UK: Scarecrow Press.
- Marasco, A., De Martino, M., Magnotti, F., & Morvillo, A. (2018). Collaborative innovation in tourism and hospitality: a systematic review of the literature. *International journal of contemporary hospitality management*, 30(6), 2364-2395.
- Mariani, M., & Baggio, R. (2020). The relevance of mixed methods for network analysis in tourism and hospitality research. *International Journal of Contemporary Hospitality Management*, 32(4), 1643-1673.
- Marouf, L. N. (2007). Social networks and knowledge sharing in organizations: a case study. *Journal of Knowledge Management*, 11(6), 110-125.
- Marsden, P. V. (2005). Recent developments in network measurement. In P. J. Carrington, J. Scott, & S. Wasserman (Eds.), *Structural analysis in the social sciences ; 27 Models and methods in social network analysis* (pp. p. 8-30). Cambridge: Cambridge University Press.
- McLeod, M. (2020). Understanding knowledge flows within a tourism destination network. *Journal of Hospitality and Tourism Insights*, 3(5), 549-566.
- McLeod, M., Vaughan, D. R., & Edwards, J. (2010). Knowledge networks in the tourism sector of the Bournemouth, Poole, and Christchurch conurbation: preliminary analysis. *The service industries journal*, 30(10), 1651-1667.
- Milwood, P. A., & Roehl, W. S. (2018). Orchestration of innovation networks in collaborative settings. *International Journal of Contemporary Hospitality Management*, 30(6), 2562-2582.
- Nonaka, I., I. N. , & Toyama, R., R. T. . (2003). The knowledge-creating theory revisited: knowledge creation as a synthesizing process. *Knowledge Management Research & Practice*, 1(1), 2-10.
- Nyanga, C., Pansiri, J., & Chatibura, D. (2019). Enhancing competitiveness in the tourism industry through the use of business intelligence: A literature review. *Journal of Tourism Futures*, 6(2), 139-151.
- Oyemomi, O., Liu, S., Neaga, I., & Alkhuraiji, A. (2016). How knowledge sharing and business process contribute to organizational performance: Using the fsQCA approach. *Journal of Business Research*, 69(11), 5222-5227.
- Parent, R., Roy, M., & St-Jacques, D. (2007). A systems-based dynamic knowledge transfer capacity model. *Journal of Knowledge Management*, 11(6), 81-93.
- Pena, I. (2002). Knowledge networks as part of an integrated knowledge management approach. *Journal of Knowledge Management*, 6(5), 469-478.
- Phi, G. T., Whitford, M., & Dredge, D. (2017). Knowledge dynamics in the tourism-social entrepreneurship nexus. *Social entrepreneurship and tourism* (pp. 155-172). Switzerland: Springer.
- Raisi, H., Baggio, R., Barratt-Pugh, L., & Willson, G. (2020). A network perspective of knowledge transfer in tourism. *Annals of Tourism Research*, 80, 102817.
- Rao, Y., Yang, M., & Yang, Y. (2018). Knowledge sharing, organizational learning and service innovation in tourism. *Journal of Service Science and Management*, 11(5), 510-526.
- Sørensen, F. (2007). The Geographies of Social Networks and Innovation in Tourism. *Tourism Geographies*, 9(1), 22-48.
- Stare, M., & Križaj, D. (2018). Evolution of an innovation network in tourism: towards sectoral innovation eco-system. *Amfiteatru economic*, 20(48), 438-453.

- Thomas, R., & Wood, E. (2015). The absorptive capacity of tourism organisations. *Annals of Tourism Research*, 54, 84-99.
- Valeri, M., & Baggio, R. (2021). Increasing the efficiency of knowledge transfer in an Italian tourism system: a network approach. *Current Issues in Tourism*, 25(13), 1-16.
- Valeri, M., & Baggio, R. (2022). Guest editorial: Knowledge management in tourism: paradigms, approaches and methods. *Journal of Organizational Change Management*, 35(2), 257-263. doi:10.1108/JOCM-04-2022-506
- van der Zee, E., & Vanneste, D. (2015). Tourism networks unravelled; a review of the literature on networks in tourism management studies. *Tourism Management Perspectives*, 15, 46-56.
- Wasserman, S., & Faust, K. (1994). *Social network analysis : methods and applications*. Cambridge: Cambridge University Press.
- Weidenfeld, A., Williams, A. M., & Butler, R. W. (2010). Knowledge transfer and innovation among attractions. *Annals of Tourism Research*, 37(3), 604-626.
- Zach, F. J., & Hill, T. (2017). Network, knowledge and relationship impacts on innovation in tourism destinations. *Tourism Management*, 62, 196-207.