

Inter-Organizational Relationships, Knowledge Strategy and Innovation in Clusters of Cultural Tourism

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ABSTRACT: The paper aims to identify the knowledge strategy (KS) developed by the firms belonging to tourism cluster according to their inter-organizational relationships and hence to analyse the impact on innovation. The empirical study is conducted on a sample of 215 firms located in UNESCO World Heritage Cities in Spain (WHCS). The methodology is based on both factor analysis and conglomerates analysis. The findings show that firms with high levels of both bonding and bridging capital carry out activities of exploration and also exploration of knowledge through an ambidextrous strategy. On the contrary, firms with scarceness of links (low levels of bonding and bringing capital) perform few activities of knowledge exploration and exploitation. On the other hand, firms that have high levels of bonding or bridging capital generally implement a punctuated equilibrium strategy. Finally, we prove that firms with an ambidexterity KS exhibit better innovation performance.

JEL Classification: D83; L14; L83; O30.

Keywords: Inter-organizational relationships; knowledge strategy; ambidexterity; innovation; cluster.

Relaciones interorganizativas, estrategia de conocimiento e innovación en los clusters de turismo cultural

RESUMEN: El objetivo del trabajo consiste en identificar la estrategia de conocimiento seguida por las empresas pertenecientes a un clúster turístico en función de relaciones interorganizativas y determinar su impacto en la innovación. El estudio

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empírico se realiza sobre una muestra de 215 empresas localizadas en las Ciudades Patrimonio de la Humanidad de España. La metodología está basada en análisis factorial y de conglomerados. Los resultados indican que aquellas empresas que poseen elevados niveles de *bonding* y *bridging* capital desarrollan actividades tanto de explotación como de exploración de conocimiento a través de una estrategia ambidiestra. Por el contrario, las empresas con escasos vínculos (bajos niveles de *bonding* y *bridging* capital) desarrollan escasas actividades de explotación y exploración de conocimiento. Por otro lado, las empresas que tienen altos niveles de *bonding* o *bridging* capital llevan a cabo una estrategia de equilibrio puntuado. Finalmente, comprobamos que las empresas que desarrollan una estrategia de conocimiento ambidiestra presentan mayor nivel de innovación.

Clasificación JEL: D83; L14; L83; O30.

Palabras clave: Relaciones interorganizativas; estrategia de conocimiento; ambidextrismo; innovación; clúster.

1. Introduction

Over the last decades, due to globalization and increasing of competition, the literature on strategic management has focused on organizational knowledge as critical resource to get competitive advantages, mainly those related to innovation (Lai, Lui and Tsang, 2016). In this context, firms need to look for new knowledge beyond the limits of the organization in order to complement their internal knowledge (Anand, Glick and Manz, 2002). Thus, knowledge transfer with diverse agents becomes increasingly important (Filieri and Alguezaui, 2014).

There is an interesting stream of literature on organizational knowledge in clusters (Grillitsch, Tödtling and Höglinger, 2015), and also some studies on the specific context of tourism clusters (Marco-Lajara, Zaragoza-Sáez, Claver-Cortés and Úbeda-García, 2016). These studies show that geographical proximity facilitates knowledge transfer among agents. However, the traditional approach tends to either overestimate the role of knowledge flows within the cluster or underestimate knowledge that is outside the cluster and that is new, not redundant and thus very valuable for firms. More recently, it has been considered that firms belonging to a cluster should take advantage of internal knowledge but also search and integrate external sources of knowledge in order to improve competitiveness in a global context. There is an open debate concerning the complementary or substitute character of acquired knowledge from internal and external agents to the cluster (Filieri and Alguezaui, 2014). However, there are no studies that analyse how different sources of knowledge of clustered firms are associated with different types of inter-organizational relations and, in turn, how they influence innovation performance. The paper fills this gap in the literature on cultural tourism clusters.

Knowledge is becoming increasingly relevant in an organization, since the choice of an appropriate strategy will determine current competitive capabilities and also its

adjustment with organizational capabilities required in the future, which can guarantee the success of the organization. March (1991) proposes the concepts exploration and exploitation of knowledge. The former implies that firms strive to develop new capabilities in order to create or acquire new knowledge, while the latter focuses on generating capabilities that allow taking advantage of existing knowledge in the organization. Although it is known that both exploration and exploitation of knowledge are critical activities in order to firms can adapt to environmental changes and to succeed, firms can use diverse combinations of them. The strategy of punctuated equilibrium consists of different cycles wherein knowledge exploitation dominates during some periods and knowledge exploration in other periods; while the ambidextrous strategy implies the simultaneous combination of high levels of exploitation and exploration of knowledge (Gupta, Smith and Shalley, 2006). Building on this, questions arise about whether all types of KS are equally viable, and also which entails the greatest impact on innovation.

Many studies have shown that inter-organizational relationships at root of social capital can facilitate access to different resources, mainly information and knowledge (Zhang and Cheng, 2015). Thus, the literature on clusters suggests that knowledge transfer grows not only by mere location in a cluster but, also, due to intense social interactions between agents belonging to the cluster (Yli-Renko, Autio and Sapienza, 2001). Furthermore, firms that establish inter-organizational relationships with agents outside of the cluster obtain access to a wider variety of sources of knowledge, avoiding problems of redundancy of the information and knowledge (Tiwana, 2008). In this perspective, it is assumed that knowledge flows established with close contacts differ from those generated with more distant actors. The former provides «bonding» social capital while the latter generate «bridging» social capital. From this classification, some studies claim that characteristics of social capital generated from distant networks are key to explore new information and knowledge while characteristics of social capital created in close networks are more appropriate to exploit the existing knowledge in the organization (Harryson, Dudkowski and Stern, 2008; Gobbo and Olsson, 2010). Therefore, we propose that the KS implemented by a firm, in terms of punctuated equilibrium or ambidexterity, is related to the different types of social capital that they usually generate.

On the other hand, the development of innovation in a firm requires diverse kinds of knowledge. According to Nonaka and Takeuchi (1995) the creation of new knowledge from the integration of external knowledge with existing one into the organization is key to generate innovation. In the context of a cluster, capacity to innovate is associated with how resourceful a firm is in exchanging knowledge with other agents, both internal and external to the cluster. Since it is shown that the KS implemented in a firm influences its innovation (Bierly and Daly 2007), recent studies point out the importance of striking a good balance between exploitation and exploration of knowledge in order to achieve higher levels of innovation through an ambidextrous strategy (Bednarek, Burke, Jarzabkowski and Smets, 2016).

Thus, the main objective of the paper is to identify different strategies of knowledge developed by firms belonging to cluster according to its bonding and bridging

capital. In addition, we aim to analyse which KS generates higher innovation performance. To this end, first, we identify diverse configurations of relationships established by firms belonging to a cluster of cultural tourism according to the bonding and bridging dimensions of its social capital. In so doing, the KS that prevails in each configuration —punctuated equilibrium or ambidexterity— is determined. From that, we compare firms' innovation performance according to the KS implemented.

This paper contributes the existing literature by identifying combinations of bonding and bridging capital on the one hand and of knowledge exploitation and exploration strategies on the other hand. These configurations are then analysed in relation to observed levels of innovation among firms belonging to a cluster. Another theoretical contribution is that the paper reinforces links between social capital theory and the territorial agglomerations approach, by examining the KS developed by firms located in a tourist clusters. Specifically, the empirical study focuses on the cultural tourism industry, analysing firms located in WHCS. This work proves that tourism clusters are territorial areas in which diverse configurations of social capital coexist that implies different KSs and, hence, heterogeneous innovation performance.

The paper is organized as follows. First, the theoretical context that justifies this research and hypotheses are posed. Afterwards, we describe the methodology and discuss the results. Finally, we present the main conclusions and implications for research and practice.

2. Knowledge strategy in tourism clusters

Over last decades there is an increasing interest on studying organizational knowledge because of it is considered a crucial driver of competitive advantages (Lai *et al.*, 2016). Many studies focus on cooperative relationships as a mechanism to acquire, create and transfer knowledge (Nonaka and Takeuchi, 1995), and thus new models of value creation and competitive advantage emerge through the knowledge-based economy. Knowledge has a rather strategic character in a organization based on its nature and the way in which it can be acquired and transferred (Teece, 1998). From this approach, it is claimed two types of knowledge: codified knowledge, which can be explicitly formulated and transferred as information and, tacit knowledge, which can be only transferred through individual and organizational learning. The process of organizational knowledge creation encompasses both tacit and codified knowledge so that both types of knowledge are considered to be complementary rather than substitute. In this paper, tacit knowledge plays a key role since it is rooted in the social network, so geographical and cultural proximity facilitate knowledge transfer and, hence, transaction costs are reduced (Balland and Rigby, 2017). Thus, firms belonging to a cluster can take advantage of informal contacts that are established with close agents in order to exchange tacit knowledge.

In the organizational context, KS is defined as a set of strategic choices that configure and drive processes of organizational learning and, hence, determine the

knowledge base of a firm (Bierly and Daly, 2007). According to the two types of knowledge coined by March (1991), exploitation involves the development of capacities to take advantage of knowledge existing, and it is associated with refinement, production, efficiency, selection, implementation and execution of current knowledge that a firm owns. On the other hand, exploration consists in bringing about new capacities to create or acquire new knowledge, so this activity is related to search, variation, assumption of risks, experimentation and discovery for the generation of new knowledge (Gobbo and Olsson, 2010).

Exploration and exploitation of knowledge are clearly different activities and require specific organizational capabilities and cultures for their development and implementation. However, team-based structures, an organizational culture that values and boosts change, open channels of communication, and human resource practices that foster creativity and innovation can generate appropriated capabilities to exploit and also explore new knowledge (Úbeda-García, Claver-Cortés, Marco-Lajara and Zaragoza-Sáez, 2016). From this, Knott (2002) points out that exploitation and exploration are complementary but not substitute strategies. In this sense, the simultaneous combination of exploitation and exploration activities requires the creation of structures, processes and cultures that are very difficult to balance, but ambidexterity can play a key role to succeed. Thus, firms seek solutions carrying out hybrid KSs, such as ambidexterity and punctuated equilibrium (Tushman and O'Reilly, 1996).

The punctuated equilibrium model describes a KS that follows a sequential pattern of long periods of exploitation and short periods of exploration. This model adopts a discontinuous approach to explain how organizations respond to change, so they act with diverse cycles of knowledge that range from stages of exploration to stages of exploitation. On the contrary, ambidexterity is a KS draw on the synchronous combination of exploration and exploitation activities. The implementation of an ambidextrous strategy requires a great effort on the part of a firm because of resources for exploitation and exploration are necessarily very different. According to O'Reilly and Tushman (2013), the ambidextrous strategy from the structural¹ approach implies not only having a organizational structure with different units for exploration and exploitation, but also the development of different organizational capabilities, systems, incentives, processes and cultures, which must be also internally aligned. Therefore, these firms have quite complex organizational structures and cultures, and they not only accept willingly any conflict, but they generally use it as encouragement for the process of new knowledge creation (Bierly and Daly, 2007).

¹ The literature points out two approaches of ambidexterity that are referred to the structure and the context of an organization (O'Reilly and Tushman, 2013). The structural ambidexterity is based on separate and different organizational units for exploration and exploitation, but which are held together through a strategic objective common, a global set of values that are linked to optimize shared assets (O'Reilly and Tushman, 2004). The contextual ambidexterity consists of behaviour of individuals to seek the balance between exploration and exploitation and is defined as the ability to simultaneously demonstrate alignment and adaptability in an organization (Gibson and Birkinshaw, 2004).

Ambidexterity and punctuated equilibrium are radically different mechanisms and there is not enough empirical evidence justifying the viability of one strategy versus the other (Gupta *et al.*, 2006). However, recently some studies support the idea that an ambidextrous strategy yields more benefits because of exploration and exploitation activities must be differentiated but, in turn, both must be integrated to generate value for the organization (Bednarek *et al.*, 2016).

Generally, firms do not own enough resources of knowledge so they have to look for them beyond its boundaries. In this sense, clusters of firm in tourism industry become an interesting context because of numerous networks created in which information and knowledge flow freely (Marco-Lajara, Claver-Cortés, Úbeda-García and Zaragoza-Sáez, 2016). Clusters consist of a set of conglomerate firms located within geographical boundaries, taking advantage of agglomeration economies. However, firms cannot survive only with assets within a cluster, but they must seek new resources outside the agglomeration boundaries to succeed (Sorensen, 2007). Spatial proximity facilitates the transfer of tacit knowledge that circulate within a tourism cluster, involving diverse agents located in the destination such as small hotels and restaurants, which only establish relations with local agents, for instance, local suppliers. Moreover, mobility of employees in this area also contributes to exchange tacit knowledge among firms located in a tourism destination. While external knowledge can be obtained from fairs and exhibitions, for example FITUR. Also, if local firms belong to a hotel chain that operates in different cultural contexts might get new and very different ideas.

Tourism firms can develop punctuated equilibrium strategies that consist in a period where prevails exploitation of internal knowledge followed by period in which prevails exploration of external knowledge. They can also implement an ambidextrous strategy by combining simultaneously exploitation of internal knowledge and exploration of external knowledge to the cluster. The success of firms located in a tourism cluster is drawn mainly on asymmetries of flows of knowledge originated at different levels within the agglomeration (Matusik and Hill, 1998). Therefore, each firm within a cluster must develop a specific KS, by striving to balance exploration and exploitation activities, according to their need for knowledge (Bierly and Daly, 2007). In this sense, the literature supports that knowledge within a firm depends on social capital generated by means of its social networks, which encompass both relations with internal and external agents to the cluster. In this process, absorptive capacity plays a critical role, both in identification and acquisition of external knowledge, as well as in its assimilation and application (Zahra and George, 2002). Thus, firms must develop this capacity in order to absorb knowledge from inter-organizational relationships. From social capital approach, this paper analyses the influence of bonding and bridging capital on KS developed by firms located in a tourism cluster.

3. Social capital in tourism clusters

The literature on social capital holds that networks of relationships provide a great value for organizations because they allow to access to wider range of resources

that are embedded in such relations (Lin, 2001). Thus, social capital refers to actors' ability to achieve benefits from a strategic location in a social network or other social structures (Porter, 1998). Many studies analyzed inter-organizational relationships and social capital in clusters (Li, Veliyath and Tan, 2013), and also in the tourism industry since local agents generally share antecedents, interests and culture (Gibson and Birkinshaw, 2004; García-Villaverde, Elche, Martínez-Pérez and Ruiz-Ortega, 2017).

It is wide known that social capital is a multidimensional concept, so Putnam (2000) posed to study social capital two dimensions: bridging and bonding social capital. A firm's bonding capital refers to relationships networks built from links with agents belonging to the cluster, by considering ties and frequency of contacts between the members of this agglomeration. Drawn on the argument of strength of ties and density of network, bonding capital offers clustered tourism firms exchange of high-quality information and tacit knowledge. On the other hand, bridging capital connects firms located in a cluster with agents belonging to diverse and remote social circles, thus facilitating access to a great variety of information and knowledge. The networks theory claims that bridging capital is created from weak links that build non-dense network where arise structural holes (Adler and Kwon, 2002). Thus, bridging capital creates ties that connect tourism firms with diverse groups that are also very heterogeneous, while bonding capital connects these firms only with members of internal groups to the cluster where there is usually more homogeneity among its members (Putnam, 2000). However, these perspectives are not mutually exclusive and both bonding and bridging social capital are needed in order to improve competitiveness of firms in tourism clusters. Thus, some studies suggest building relationships that combine bonding and bridging capital, so that firms might take advantage of both types of linkages according to their specific circumstances (Molina-Morales, Martínez-Fernández and Torló, 2011).

4. Hypotheses

The knowledge that a firm is able to create depends, to a great extent, on social capital generated by its network of relationships (Zhang and Cheng, 2015). Firms establish links with diverse agents that provide them with access to information and fosters knowledge transfer, so from these stable relations, social capital makes easier the conditions to generate new knowledge (Nahapiet and Ghoshal, 1998). In the context of tourism clusters, social capital plays a crucial role as the main mechanism to knowledge transfer. The benefits for firms placed in a relationships network might be very different depending on their contacts, for instance, relationships established with internal or external agents to the cluster what entails generate different kinds of knowledge. In this sense, it is known that each type of social capital —bonding and bridging— contributes to acquisition of different types of knowledge, which draw on both exploitation and exploration strategies (Gilsing and Duysters, 2008).

Therefore, from the association of social capital —bonding and bridging— and KS —exploration and exploitation— can be obtained a matrix that contains four

configurations of firms —Table 1—. Next, we pose the hypotheses that connect the two dimensions of social capital with the two strategies of knowledge, after that we compare innovation performance in each configuration.

Table 1. Configurations

| | | | |
|------------------------|-------------|---|--|
| Bonding capital | <i>High</i> | Punctuated equilibrium in a cycle of exploitation (high exploitation and low exploration) | High ambidexterity (high exploitation and low exploration) |
| | <i>Low</i> | Low ambidexterity (low exploitation and low exploration) | Punctuated equilibrium in a cycle of exploration (high exploration and low exploitation) |
| | | <i>Low</i> | <i>High</i> |

Bridging capital

4.1. Punctuated equilibrium strategy: bonding capital and exploitation of knowledge

The literature on clusters points out that knowledge acquired by firms from their relationships with agents located within the cluster is quite redundant, which, however, is suitable to develop a KS based on exploitation. On the one hand, homogeneity existing among clustered firms entails that the flows of information and knowledge circulating in the cluster become quickly redundant (Expósito-Langa and Molina-Morales, 2010). On the other hand, these firms generally do not trust external information, so they tend to discard ideas generated outside the cluster, considering also that their ideas are faced competitors. For this reason, clustered firms increase the use of internal information even though it is very homogeneous what enhances their redundancy due to overexploitation. Moreover, in the context where capital bonding prevails, firms generally consider that all of them are exposed to the same opportunities and threats, so they develop alike routines to face environmental changes (Atuahene-Gima and Murray, 2007). Since opportunities are redefined constantly, firms are more predisposed to develop activities of knowledge exploitation (Molina-Morales *et al.*, 2011). In brief, in a context of high level of bonding capital and low level of bridging capital, firms will tend to implement a cyclical punctuated equilibrium strategy, by combining successive stages of high-exploitation and low-exploration. From these arguments, we propose the first hypothesis:

H1: The higher the level of bonding capital when bridging capital is low, the greater the probability that the KS involves high level of exploitation and low level of exploration (punctuated equilibrium).

4.2. Punctuated equilibrium strategy: bridging capital and exploration of knowledge

Social capital theory supports the idea that firms, from their relations network with external agents to the cluster, can access to more diverse, novel and non-redundant knowledge that are the characteristics needed to develop a strategy of knowledge exploration (Sorensen, 2007). This is because structural holes allow firms to establish contacts with agents placed in social circles with very heterogeneous background, experience, knowledge and skills that grant access to novel and non-redundant sources of information and knowledge (Expósito-Langa and Molina-Morales, 2010). Firms located in a network with structural holes has potentially more opportunities to explore new ideas, because they have access to multiple domains of specialization of knowledge (Tiwana, 2008). In addition, new information is maximized if contacts are not connected with each other, since non-redundant links provide unique knowledge. Therefore, for firms using bridging capital provided from relationships with diverse and external agents to the cluster it will be easier to develop a KS of exploration (Tiwana, 2008). In summary, in a context of high level of bridging capital and low level of bonding capital, it is likely that firms carry out a punctuated equilibrium strategy, but in this case, with repeated stages of high level of exploration and low level of exploitation. According to this argument, we pose the second hypothesis:

H2: The higher the level of bridging capital when bonding capital is low, the greater the probability that the KS involves high level of exploration and low level of exploitation (punctuated equilibrium).

4.3. Ambidexterity knowledge strategy

Many studies emphasise the complementarity of both dimensions of social capital—bonding and bridging—in order to create an optimal structure of network (Harryson *et al.*, 2008). These two dimensions are necessary to develop an ambidexterity KS. Relationships with remote agents, which generate bridging capital, allow access to cognitively distant sources of knowledge and, thus, create access to diverse and novel information. Thus, firms should ensure access to this new knowledge and also, in case it is valuable, they must be able to absorb and apply it within their organizations. However, to integrate knowledge from distant contacts a firm needs another kind of relations network in which is generated bonding capital (Gobbo and Olson, 2010). Thus, in the context of a cluster, firms should strive for a balance between their relationships with agents of non-redundant networks that allow them to access a wide range of cognitive knowledge, and agents located in redundant networks, which make easier triangulation and absorption of knowledge (Gilsing and Duysters, 2008).

Therefore, firms that are very socially active and entertain numerous relations with internal and external agents to the cluster can achieve high levels of both bonding and bridging capital. This, in turn, will pave the way to capabilities to exploit and explore knowledge through ambidexterity strategy. On the contrary, firms that are

isolated with few external and internal contacts will have more difficulties in developing suitable capabilities to explore and exploit knowledge, so it is likely that the strategy implemented is low level of ambidexterity. Thus we propose the following hypotheses:

H3: The higher levels of bonding and bridging capital, the greater the likelihood that the KS yields high levels of exploration and exploitation (high ambidexterity).

H4: The lower levels of bonding and bridging capital, the greater the likelihood that the KS yields low levels of exploration and exploitation (low ambidexterity).

4.4. Knowledge strategies and innovation

A wide literature on the antecedents of innovation in firms belonging to a tourism cluster emphasises the role of social capital and, also of the KS implemented by these firms (Sorensen, 2007). It has been argued that social capital facilitates the acquisition of new knowledge and recombination of existing knowledge, which, in turn, leads to development of innovation (Filiari and Alguezaui, 2014). Although there is a lot research about KS, these studies have not provided clear findings about which KS is most effective in terms of innovation (Bierly and Daly, 2007). Knowledge is a key input in the process of innovation, from the generation of new ideas phase, in which exploration activities are crucial, to implementation phase that depends on the exploitation of knowledge. In this sense, firms that carry out strategies of exploitation and exploration simultaneously are generally more innovative. Therefore, ambidexterity strategy is increasingly important to carry out successfully all phases of the innovation process (Bierly and Daly, 2007; Bednarek *et al.*, 2016). However, a firm that focuses on exploration activities, avoiding exploitation, will undergo high experimental costs before achieving relevant results of innovation (March, 1991). On the other hand, firms that develop a KS of exploitation, excluding exploration, will not achieve high levels of innovation performance (Atuahene-Gima and Murray, 2007).

If firms seek to improve innovation performance, they must develop dynamic capabilities in order to adapt to current changes by means of knowledge exploitation and, in turn, new resources for future through knowledge exploration activities (Gibson and Birkinshaw, 2004). Therefore, only firms that are able to implement an ambidexterity KS, consisting of high levels of both bonding and bridging capital, will achieve better innovation performance (Lazer and Friedman, 2007). Following these arguments, we propose the following hypothesis:

H5: The configuration that implements the ambidexterity KS, with high levels of both bonding and bridging capital, will achieve higher innovation performance relative to the remaining three configurations.

5. The study setting

The tourism industry, despite the economic crisis, is a key sector to Spanish economy in terms of both growth and employment. However, as new destinations rise on the horizon tourism firms need to respond to the competitive threat with strategies based on innovation and sustainable development. In this sense, in spite of being widely known for sun-and-beach tourism, cultural tourism in Spain has grown in recent years. The rise in the flow of tourists in WHCS confirms this. In this industry, coordination between firms and institutions is strategically important for the development of a complete touristic experience which, in turn, benefits the competitiveness of firms. WHCS are a context where it is possible to put in place significant mechanisms of cooperation and coordination by integrating public and private agents in order to enhance destination's competitiveness and, hence, attract and satisfy a greater amount of tourists.

The paper focuses on tourism firms located in WHCS, since, in a previous study, Martínez-Pérez, García-Villaverde and Elche (2016) proved that these cities are tourism clusters. The listed cities by UNESCO in Spain are: Alcalá de Henares, Ávila, Cáceres, Córdoba, Cuenca, Eivissa (Ibiza), Mérida, Salamanca, Santiago de Compostela, Segovia, San Cristóbal de la Laguna, Tarragona and Toledo. From SABI and Camerdata databases we set the study population that consists of 2,037 firms of different branch of tourism, following Lazzeretti and Capone (2008), we also identify these activities from the CNAE-09. Since in these cities 95.6% of tourism firms have less than 10 employees, we propose as an additional condition not to include firms with less than 3 employees, guaranteeing so a minimum organizational and operational structure that allow analyse their strategic behaviour.

Through a postal and online survey, we collected 215 valid questionnaires, with a response rate of 10.55% and a sampling error of 6.32%. We tested the non-response bias and results did not show significant differences between managers who responded and those who have not replied. Furthermore, to avoid the response bias due to manager perceptions we sent another questionnaire to a second manager within the firm. We obtained two questionnaires for a subsample of 15.81% (34 firms) and carried out a mean differences test between responses of the senior and the second manager. Results show no significant differences for the variables of interest. In addition, the factor Harman test confirms that there is no common method bias. The items of the variables were measured with a 7-point Likert scale. Table 2 summarises the variables, the measurement scales and the sources.

As previously explained, and following Putnam (2000), social capital consists of bonding and bridging capital. We consider that both dimensions are crucial to analyse the association between social capital and KS in firms belonging to a tourism cluster. These concepts were measured with multi-item scales previously used in the literature. Bonding capital is related to social interactions that arise in a relationships network (Nahapiet and Ghoshal, 1998) and, it is composed of ties and configuration of a network. The ties are referred to strength of relations and they are measured with

Table 2. Variables of the questionnaire

| <i>Variable</i> | <i>Dimension</i> | <i>Items</i> | <i>Literature sources</i> |
|--------------------|------------------|--|---|
| Social capital | Bonding capital | The firm connects frequently with its contacts | Maula, Autio y Murray (2003) y Molina-Morales y Ares-Vázquez (2007) |
| | | In the firm, the contacts are personally known | |
| | | In the firm, there are close social relationships with its contacts | |
| | | The resources and information exchanged with its contacts were similar | |
| | | The frequent firm's contacts know each others | |
| | | The firm's contacts that provide useful information know each others | |
| | Bridging capital | Many the firm's contacts are specialized in a great variety of activities | Tiwana (2008) |
| | | Many the firm's contacts have very different and diverse experiences | |
| | | Many the firm's contacts have abilities and skills which are complementary | |
| Knowledge strategy | Exploitation | Valuable existing knowledge elements were identified, combined and reused | Revilla, Prieto y Prado (2010) |
| | | Existing knowledge and competences related to existing products/services were used and adjusted | |
| | | New and existing ways of doing things were integrated without hindering efficiency | |
| | | Lessons learned in other areas of the organization were put in operation | |
| | Exploration | Product problem areas generating customer dissatisfaction were discovered and solved through creative ways | |
| | | Problem areas generating customer dissatisfaction were discovered and solved through creative ways | |
| | | New knowledge, methods and technological ideas were introduced | |
| | | Many new novel and creative ideas were produced by «thinking outside the box» | |

Table 2. (continue)

| <i>Variable</i> | <i>Dimension</i> | <i>Items</i> | <i>Literature sources</i> |
|-----------------|------------------|-------------------------|----------------------------|
| Innovation | | Products or services | Doloreux y Shearmur (2010) |
| | | Production process | |
| | | Delivery process | |
| | | Market and sale process | |
| | | Business strategy | |
| | | Managerial techniques | |
| | | Marketing techniques | |

a three-item scale adapted from Maula, Autio and Murray (2003). The configuration means density of a network that is measured using a three-item scale adapted from Molina-Morales and Ares-Vazquez (2007). Bridging capital reflects the dispersion of a network, which allows access to new and diverse resources through structural holes. Following Tiwana (2008) we use a three-item scale that values the diversity of knowledge, abilities and background of relationships.

In this paper, the KS refers to a firm’s choice about the balance between exploitation and exploration activities that led to strategies of punctuated equilibrium or of ambidexterity. The KSs of exploitation and exploration are measured according to Revilla, Prieto and Prado (2010). Exploitation is valued through a four-item scale that estimates the degree of product development from experience and the integration of knowledge. On the other hand, exploration is measured by means of a four-item scale that defines the degree to which the development of new products introduces new ideas and new knowledge.

In relation to innovation, previous studies focused on service sector suggest taking into account technological and non-technological innovations. Thus, this variable is measured by a scale, first proposed by Doloreux and Shearmur (2010), which encompasses seven aspects of innovation: product, process, delivery, marketing, business strategy, management and marketing techniques. The degree of novelty was also considered to include both significant changes and radically new innovations. To avoid biases in time fluctuations and approximate the notion of sustainability of innovation, respondents were asked about innovation over the last five years.

6. Empirical results

first, we test the robustness of the variables through confirmatory and exploratory factor analyses. The confirmatory factor analysis with Varimax rotation yielded a value

of Cronbach's alpha for social capital = 0.849 (density = 0.796 and strength = 0.782). The Kaiser-Meyer-Olkin (KMO) value is 0.758 (> 0.6) and the Bartlett's sphericity test is significant (Chi-square = 1024.824; df = 36; sig. = 0.00). From these analyses, we obtained three factors with an explained variance of 42.65%. The factor loads exceeded 0.685. Also, the exploratory factor analysis showed satisfactory goodness-of-fit indices ($\chi^2 = 61.11$, df = 24, NFI = 0.929, CFI = 0.955, IFI = 0.956, RMESA = 0.07). In relation to the reliability of scales, the alpha of Cronbach for the KS is 0.929 (exploitation = 0.923 and exploration = 0.910). The factor analysis performances two factors, one associated with exploitation and another with exploration, and also all tests showed satisfactory results (Kaiser-Meyer-Olkin > 0.60 [0.869]; and p -value < 0.00 [Chi-square = 1480.747; df = 28; sig. = 0.00]). The explained variance is 67.04% and the factor loads exceeded 0.766. From exploratory factor analysis, the goodness-of-fit indices were all satisfactory ($\chi^2 = 75.65$, df = 19, NFI = 0.917, CFI = 0.936, IFI = 0.936, RMESA = 0.08). Likewise results of factor analysis for innovation variable were suitable (Cronbach's alpha = 0.967; KMO = 0.902; Chi-square = 1625.087; df = 21; sig. = 0.00). In this case, from the factor analysis with Varimax rotation was obtained one factor whose explained variance is 78.45% and the loads exceeded 0.814. The goodness-of-fit indices were satisfactory ($\chi^2 = 40.73$, df = 14, NFI = 0.957, CFI = 0.970, IFI = 0.970, RMESA = 0.08).

Subsequently, we carried out a conglomerates analysis in order to identify diverse configurations of inter-organizational relationships in terms of social capital —bonding and bridging—. First, we determine the optimal number of groups by means of a hierarchical cluster analysis (Ward's method) based on Euclidean distance. This analysis is complemented with the criterion of Ferguson and Ketchen (1999) to expand the number of groups and improve the explanatory power of results. Having considered the agglomeration coefficient, that is, the squared Euclidean distance between each case, we decided that four is the optimal number of conglomerates. Afterwards, we carried out a K-means cluster analysis to group the firms in each conglomerate. These results based on final centres are presented in Table 3.

Table 3. K-means conglomerates analysis of social capital

| | <i>Cong. 1</i> <i>Low-Low</i> <i>n = 24</i> | <i>Cong. 2</i> <i>High-High</i> <i>n = 83</i> | <i>Cong. 3</i> <i>High-Low</i> <i>n = 35</i> | <i>Cong. 4</i> <i>Low-High</i> <i>n = 73</i> | <i>F</i> | <i>p</i> | <i>Differences</i> <i>between groups *</i> |
|------------------|---|---|--|--|----------|----------|--|
| Bonding capital | 2.56 (0.66) | 5.38 (0.66) | 5.20 (0.75) | 3.93 (0.69) | 139.071 | 0.00 | C1<C2,C3,C4; C2>C1,C4; C3>C1,C4; C4>C1; C4<C2, C3 |
| Bridging capital | 3.15 (0.92) | 5.76 (0.80) | 2.87 (1.01) | 4.62 (0.55) | 146.359 | 0.00 | C1<C2,C4; C2>C1,C3,C4; C3<C2,C4; C4>C1,C3; C4<C2 |

* Scheffé test $p < 0,05$

Conglomerate 1 includes 24 firms that exhibit low levels of both bonding capital and bridging capital. Conglomerate 2 contains 83 firms characterised by high levels of both bonding and bridging capital. Conglomerate 3 comprises 35 firms that present high level of bonding capital and lower level of bridging capital. Conglomerate 4 consists of 73 firms with low level of bonding capital and high level of bridging capital. Results from ANOVA and the Scheffé test showed differences statistically significant between pairs of conglomerates.

Afterwards, we analyse in each configuration the association between types of KS —exploitation and exploration— and types of social capital —bonding and bridging—. To do so, we carried out ANOVA and the Scheffé test —Table 4— to confirm the hypotheses. Besides exploitation and exploration individually, the analysis includes an interaction term between exploitation and exploration strategies that yields the ambidexterity strategy. Table 4 shows the descriptive statistics (means and standard deviations), ANOVA analysis and the Scheffé test for the four conglomerates in terms of social capital. As indicated by the ANOVA analysis, results revealed significant differences between bonding and bridging social capital that a firm requires to develop its KS that can be exploitation, exploration or ambidexterity.

Table 4. ANOVA test of knowledge strategy

| | <i>Cong. 1</i> <i>Low-Low</i> <i>n=24</i> | <i>Cong. 2</i> <i>High-High</i> <i>n=83</i> | <i>Cong. 3</i> <i>High-Low</i> <i>n=35</i> | <i>Cong. 4</i> <i>Low-High</i> <i>n=73</i> | <i>Total</i> | <i>F</i> | <i>p</i> | <i>Differences</i> <i>between groups*</i> |
|--------------|---|---|--|--|------------------|----------|----------|--|
| Exploitation | 4.18 (1.28) | 5.61 (0.97) | 5.19 (1.03) | 4.88 (1.04) | 5.13 (1.13) | 14.03 | 0.00 | C1<C2,C3, C4; C2>C1,C4; C3>C1; C4>C1; C4<C2 |
| Exploration | 4.23 (.23) | 5.52 (0.99) | 4.66 (1.42) | 5.02 (1.13) | 5.068 (1.21) | 10.02 | 0.00 | C1<C2,C4; C2>C1,C3; C3<C2; C4>C1 |
| Expt*Expr | 18.89 (9.35) | 31.48 (9.55) | 25.15 (11.37) | 25.22 (9.29) | 26.93 (10.51) | 12.58 | 0.00 | C1<C2; C2>C1, C3, C4; C3<C2; C4<C2 |

* Scheffé test $p < 0,05$

Specifically, firms with high level of bonding capital and low level of bridging capital —conglomerate 3—, have higher values of exploitation (5.19) than exploration (4.66), according to what is established in hypothesis 1. Also, as per hypothesis 2, firms with low level of bonding capital and high level of bridging capital —conglomerate 4— show higher levels of exploration (5.02) than exploitation (4.88). However, the Scheffé test showed that the differences between these two configurations, in terms of exploitation and exploration, are not statistically significant, so that hypotheses 1 and 2 cannot be corroborated.

On the other hand, firms that present high levels of both bonding and bridging capital —conglomerate 2— show a high KS of ambidexterity, with high exploitation

(5.61) and high exploration (5.52), as per hypothesis 3. In addition, the difference of exploitation in conglomerate 2 with respect to the conglomerates 1 and 4 is statistically significant and the difference of exploration in conglomerate 2 with respect to the conglomerates 1 and 3 is also statistically significant, so hypothesis 3 can be confirmed.

On the contrary, firms with low levels of bonding and bridging capital —conglomerate 1—, are characterized by low exploitation (4.18) and low exploration (4.23), that is, a KS of low ambidexterity, as per hypothesis 4. Moreover, in conglomerate 1, the difference of exploitation with respect to the conglomerates 2 and 3 is statistically significant. Likewise, the difference of exploration in conglomerate 1 with respect to conglomerates 2 and 4 is statistically significant. Therefore, from these results hypothesis 4 can also be confirmed.

Similarly, we analysed the multiplicative interaction of exploitation by exploration to evaluate the joint effects, and results showed that there are significant differences for conglomerate 1 (low values for both exploration and exploitation) and 2 (high values for both exploration and exploitation). Therefore, it is considered the KS of conglomerate 1 as low ambidexterity and the KS of conglomerate 2 as high ambidexterity. These results reinforce the corroboration of hypotheses 3 and 4.

Finally, we compared innovation in the four conglomerates to identify the configuration that are more innovative, so that we can determine which KS yields better innovation performance. The results of the ANOVA and the Scheffé test —Table 5— show that firms with high levels of bonding and bridging capital —conglomerate 2— exhibit higher innovation performance (4.71) compared to other conglomerates. In addition, the differences of innovation of conglomerate 2 compared to the others are statistically significant. Results from these analyses suggest acceptance of hypothesis 5.

Table 5. ANOVA test of innovation

| | <i>Cong. 1</i> <i>Low-Low</i> <i>n = 24</i> | <i>Cong. 2</i> <i>High-High</i> <i>n = 83</i> | <i>Cong. 3</i> <i>High-Low</i> <i>n = 35</i> | <i>Cong. 4</i> <i>Low-High</i> <i>n = 73</i> | <i>F</i> | <i>p</i> | <i>Differences</i> <i>between groups*</i> |
|------------|---|---|--|--|----------|----------|--|
| Innovation | 3.95 (1.10) | 4.71 (1.00) | 3.99 (0.94) | 4.35 (1.06) | 7.27 | 0.00 | C2>C1, C3, C4 |

* Scheffé test $p < 0,05$

7. Discussion and conclusions

Knowledge is widely considered as a strategic resource to achieve competitive advantages and a key antecedent to explain the KS is social capital. The literature

on territorial agglomerations has contributed significantly to study the connection between social capital, organizational knowledge and innovation. So far, however, there has been little discussion about the connection between inter-organizational relationships and KS, by studying also its impact on innovation in the context of tourism clusters.

The present study contributes in many ways to the literature. First, we identified the KS implemented by tourism firms located in a cluster according to their bonding and bridging capital. Specifically, the findings show that a firm with a great deal of internal and external relationships to the cluster generally develop ambidexterity strategy, by combining knowledge exploitation and exploration activities. Thus, high levels of bonding and bridging capital foster both exploitation of previously existing knowledge and exploration of new knowledge. Conversely, when a tourism firm does not invest in maintaining internal and external relationships, the KS will be low ambidexterity that involves low levels of both exploration and exploration knowledge activities.

On the other hand, when either internal relationships or external relationships to the cluster in a firm prevail the KS is generally a punctuated equilibrium. Our results partially show that firms with high level of bonding capital and low level of bridging capital have a higher level of exploitation than exploration, developing a KS of punctuated equilibrium that is focused on the exploitation. Thus, the higher level of bonding capital, the higher level of knowledge exploitation, since dense networks and strong links allow firm to share knowledge base of cluster that is quite homogeneous, which will encourage exploitation of available knowledge.

Moreover, when a firm exhibits low levels of bonding capital and high levels of bridging capital, exploration predominates over exploitation. In this case, KS of punctuated equilibrium prevails over knowledge exploration. This is because relationships with external agents allow firms to access to diverse and novel knowledge, which is inherent to exploration activities. Therefore, in the case of both strategies of punctuated equilibrium —prevailing exploitation or prevailing exploration—, they are adjusted only moderately to configurations.

In short, we consider that the implementation of a particular KS is associated to relationships established by a firm, which generate specific types of social capital. Therefore, the results of this study point out that the adoption of ambidexterity or punctuated equilibrium strategies is related to bonding and bridging capital developed by a firm.

In addition, we have identified which KS is associated with higher levels of innovation. In this sense, firms with high levels of bonding and bridging capital with ambidexterity KS present higher levels of innovation compared to firms within other configurations. Thus, although it has been argued that exploitation and exploration are substitute strategies since they require very different resources and organizational structures, we show that maintaining a suitable balance whit both strategies is a key factor for improving innovation performance (Bednarek *et al.*,

2016). In this way, we conclude that it is important for firms to strike a balance between exploitation and exploration activities in order to generate higher levels of innovation.

Overall, our results show that firms engage unique and idiosyncratic patterns of relationships within an agglomeration and, consequently, that they have different exposure to new ideas, knowledge and opportunities. Therefore, the mere fact of belonging to a tourism cluster does not provide a firm with access to more and better sources of knowledge. On the contrary, it is the firm's set of capabilities for managing available knowledge and establishing relationships that matter.

Therefore, tourism firms located in a cluster must strike a balance between non-redundant networks with access to a cognitive variety, and redundant networks for triangulation and knowledge absorption. On the basis of this, the recommendation is that firms combine close relationships established within the cluster with links with external agents, in order to develop simultaneously exploitation and exploration KS that contribute to improve innovation performance.

In relation to the limitations of this study, we point out the exploratory approach of KS and social capital. Although this fact hinders the possibility of obtaining conclusive results in the adjustment between pairs of variables, however, we analysed jointly relationships and strategies from a configurational approach.

On the other hand, this study has a static character so that is not possible to analyse the evolution of the configurations obtained. To overcome this limitation, we propose to carry out a longitudinal study to study the mobility of firms between the four configurations and their impact on their long-term results. Another limitation is the focus on cultural tourism, which might entail problems for the generalizability of the results. However, we consider that the characteristics taken into account in this study are common to other types of tourism. This suggests some relevance to other sectors of activity, though with due caution. In any case, it is desirable to continue studying the different configurations related to social capital and KS in other tourism industries.

8. References

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