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How Types of Destination Influence Tourism Innovation Networks?

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Innovation; Mountain Resorts; Tourism; Networks; Geographical Location

Abstract:

This paper examines the influence of the type of geographical location on the characteristics of innovation networks in the tourism industry, specifically in mountain resorts. It compares the innovation network forms of two types of mountain resorts (high-altitude and medium-altitude resorts) regarding four characteristics: the nature of the relationships between members, the mode of regulation used, the architecture, and the geographical scope. Our results show that according to the type of territory, innovation networks differ in type of partners, geographical scope, and regulation mode. However, the type of territory does not seem to influence the architecture of the network since all the networks studied have a hub organization that orchestrates the partners' actions.

INTRODUCTION

Innovation networks has increasingly become a topic of research within the tourism field (Novelli *et al.*, 2006; Hjalager, 2010; Paget *et al.*, 2010; Williams and Shaw, 2011; Weidenfeld, 2013; Blasco *et al.*, 2014). Indeed, while the nature of the tourism product has always affirmed the central role of activities coordination (Lashley *et al.*, 2007; Beritelli, 2011), this intrinsic characteristic is now reinforced by the need to innovate in response to increased competition, which in turn demands more coordination among organizations (Flagestad and Hope, 2001; Novelli *et al.*, 2006; Petrou and Daskalopoulou, 2013; Falk, 2017). In innovation management, several studies have shown territory's influence on the type of innovation developed by industrial firms or on the firm's ability to innovate in a network (Fritsch and Lukas, 2001; Sorenson and Baum, 2003; Stieglitz and Heine, 2007). However, there is little research on the influence of the type of territory on the characteristics of the innovation networks in the tourism field, although it may be important for destinations to select the right partners and set up appropriate network structures for the territory they promote.

An innovation network is defined as a set of at least three organizations linked by an innovation project. We therefore seek to analyze the influence of geographical location on the characteristics of tourism innovation networks, comparing network configurations based on the territory in which they operate. We focus our analysis on networks developed in mountain area resorts. This choice of mountain tourism was made for several reasons. First of all, it is a global business sector (Lordkipanidze *et al.*, 2005) that is particularly important for the French economy: There are nearly 250 mountain resorts in France that welcome 10 million tourists each year (Domaine Skiable de France, 2016) and generate nearly 120,000 jobs. These resorts sold 52 million lift tickets in the 2015/2016 season, putting France in the number two position in the global market, behind the United States. Second, mountain tourism is strongly anchored in its territory, which has generally encouraged researchers to consider these destinations as localized productive systems (Hjalager, 2010). As this sector is not homogeneous in terms of organization, it is a particularly rich and specific area to study in terms of territorial dynamics.

In order to improve the understanding of innovation networks in the field of tourism, we have chosen to study the networks deployed in two types of mountain resorts: high-altitude and medium-altitude resorts. This article is divided into two parts. The first part presents the differences between medium- and high-altitude resorts and a review of the literature on the main characteristics of networks. The second part explains our methodological approach and discusses our empirical results on the link between the type of resort and its innovation networks.

1 INNOVATION NETWORK CHARACTERISTICS AND TYPE OF MOUNTAIN RESORTS AND: AN ANALYTICAL FRAMEWORK

We first present the main characteristics of an inter-organizational network. Second, we explain the differences between the two types of mountain resorts studied and present the competitive context in which they have evolved. At the end of this theoretical part, we propose an analysis framework that can be used to compare the innovation networks in the different types of mountain resorts.

1.1 Innovation network characteristics

Researchers often raise the issue of tourism networks characteristics (Paget et al, 2010). However, despite their importance and complex nature, innovation networks characteristics are rarely the sole object of research and are often presented indirectly, implicitly or with a focus on only one characteristic. As these networks can take multiple forms, what is missing is a clear typology of main innovation networks characteristics. Prior literature on tourism cooperation also reveals a great diversity of tourism cooperation analyses (Czernek, 2013), from international to local and from static to dynamic. In this context, we use an integrative and static approach and draw on results of previous research to build a conceptual framework which identifies the four main innovation networks characteristics in mountain resorts: (1) the nature of the relationships among members, (2) the mode of regulation, (3) the architecture, and (4) the geographical scope.

1.2.1 Relationship types

Cooperation within the private and the public sectors (intrasectoral), and between different sectors (intersectoral), is one of the conditions for a tourist region to achieve competitive advantage (Czernek, 2013). Relationships among partners can take many forms (Inkpen and Tsang, 2005). In a horizontal relationship, members build relationships with competitors to share the same resources, whereas in a vertical relationship, their aim is to transfer additional resources between a client and a supplier. Finally, in an “inter-industry” relationship, the networks encompass potentially complementary organizations that are neither competitors nor connected by customer–supplier relationships. Such networks are willing to share skills or promote a single resource. These three forms of inter-organizational networks can also be combined (Gomes-Casseres, 2003).

1.2.2 Regulation modes

Regulation mode refers to the coordination mechanisms used by network members. In transaction costs theory, the network is presented as an alternative structure to the market (outsourcing) or hierarchy (integration) structures that can reduce transaction costs. Regulation in this view is often formalized and based on contractual modes. From a sociological standpoint (Borgatti *et al.*, 2009), the development of a network requires preexisting relationships between organizations and especially between individuals in those organizations. In this approach, the behavior of organizations is not influenced by the risk of opportunism, but rather by the trust and reputation of partners. The existence of trust facilitates timeliness and flexibility and eliminates the need for lengthy contract negotiations (Bell, 2005). A high-trust context provides better communication between actors and exposes them to a rich flow of tacit knowledge that is useful for innovation (Bell, 2005). Cognitive modes seem to be preferable to normative modes (contracts) in spurring innovation. The embedding of members in a network in which they share a code of conduct and trust promotes effective cooperation and reduces the risk of opportunistic behavior. Other authors show that these modes can be complementary (Huggins, 2000). Therefore, in this research, we view regulation modes as a continuum from formal modes (contracts, financial incentives, and linked specific assets) to socio-cognitive modes (trust, reputation, and shared values).

1.2.3 Network architecture

Concerning network architecture, two types of networks have been identified, depending on the degree of power sharing.

Centralized network architecture focuses the flow of information to and from one organization. The objective of this organization, called the hub firm, is to regulate transactions within the structure (Dhanaraj and Parkhe, 2006). The hub firm has three functions: 1) the design of the value chain, which involves choosing the network members and setting strategic directions; 2) coordination of the value chain, which involves optimizing the operational links between network members, limiting the administrative costs of the hierarchy, and maintaining coordination modes in the market; 3) control of the value chain, by discouraging opportunistic behavior that could disrupt network efficiency. In the particular context of innovation networks, where knowledge is the chief currency and is dispersed, it is important to ensure knowledge mobility (Dhanaraj and Parkhe, 2006).

In decentralized networks, power is more evenly distributed, and the presence of a single hub firm is rarely observed. Companies all have a relatively similar weight and the control functions are divided among all the partners. In this architecture, all partners are connected, but none holds a privileged regulatory role (Bell, 2005).

1.2.4 Geographic scope

The fourth network dimension is its geographic scope, which describes the spatial or physical distance between members. A network may be local, national, or international. We retain this last feature because many studies (Autant-Bernard, 2001; Fritsch and Lukas, 2001; Frost, 2001; Elango, 2004) show the importance of geographical proximity in the smooth operation of networks. The geographical approach depends on the relations among spatially proximate components and actors, who facilitate intraregional interactions and a circulation of knowledge, information, resources and human capital within and between subsystems and carry out innovations within institutional frameworks (Weidenfeld, 2013). Moreover, value creation increases when networks have a territorial anchor. Regionalization seems to be a determining factor in the performance of innovation systems, as information is sticky and place-specific, and the ability to transfer information decays with distance. Geographic proximity between firms often leads to better access to common knowledge (Bell, 2005; Saxena and Ilbery, 2008). Proximity also promotes flexibility, interaction frequency between members, and the development of trust (Bell, 2005).

These four dimensions suggest that there are numerous potential forms of innovation networks. Our key contribution is to study the influence of territory on network characteristics.

1.2 Mountain resorts: Typology and motivations for setting up innovation networks

Mountain resorts can be classified as tourist-localized systems (Hjalager, 2010) in which public and private actors are encouraged to build relationships to ensure their management (Cattelin and Thévenard-Puthod, 2006; Novelli *et al.*, 2006). However, the type of governance and actors are not the same in high- and medium-altitude resorts (Paget *et al.*, 2010; Gerbaux and Marcepoil, 2006). In medium-altitude resorts in France, municipalities are often at the heart of the "resort system" and manage the ski lifts. Moreover, resorts tend to be integrated into a wider territory such as a regional

park (François and Billet, 2010). In this context, skiing is one activity among others in the territory, which thus experiences more fragmented tourist stays than do high-altitude resorts. As they are more geographically accessible than their competitors at higher altitudes, medium-altitude resorts are better suited to shorter stays with a strong presence of local day-use clientele. In contrast, most high-altitude resorts are managed by a private organization (Paget et al, 2010, 2010; Gerbaux and Marcelpoil, 2006). In this type of resort, the approach is closer to a value chain than a territorial viewpoint. High-altitude resorts are more concentrated and organized primarily around alpine skiing. Table 1 summarizes the main differences between these territories.

	Resort Size	Customer	Main actors in the resorts	Link with the territory	Role of skiing
High-altitude resorts	Medium to large resorts	Guests staying for a week or more	Private actors	Value chain view	Central
Medium-altitude resorts	Very small to medium-sized resorts	Guests staying for a week or less; daily visitors	Public actors	Territorial view	One element in a range of services

Table 1: Characteristics of medium- and high-altitude resorts

Despite their differences, these two types of resorts have undergone many changes over the last fifteen years. First of all, they have had to face a general decline in customers, whether in winter (-3% per year on average; Domaines Skiabiles de France, 2016) or in summer. This decrease is due to a combination of many factors. At the socio-cultural level, there has been a decrease in how much visitors ski, now at about 4 hours per day on average, so customers want to vary their activities, within a week's stay or even a single day. There has also been a significant reduction in the average length of stays: tourists prefer to go on holiday more often during the year, but for shorter stays, with winter holidays occupying a secondary place in comparison with summer vacation (Goncalves, 2013).

Secondly, tourism has continued to expand, and this growth has been accompanied by a globalization of destinations. Today, a French tourist who wants to take a holiday in February can certainly start by choosing among the 250 French ski resorts, but can also opt for other European resorts such as Swiss, Italian, Austrian, or Andorran resorts, which are often better positioned in terms of price, or even the low-cost resorts that have emerged in certain countries such as Bulgaria. Even Chinese or Russians tourists now have the opportunity to ski in their own country. In addition, "sunny" destinations such as North Africa and the Canary Islands should also be considered as serious competitors to winter sports resorts, as this type of holiday often appears easier to organize and more accessible (Goncalves, 2013). Thirdly, in difficult economic times, customers are becoming increasingly sensitive to the price/quality ratio. On the one hand, their expectations for comfort and quality of service are increasing. On the other hand, they are increasingly skilled at finding promotional offers, aided by the development of digital tools that enable them to compare prices online and locate last-minute deals (Favre-Bonté and Tran, 2015).

In this highly competitive environment, mountain resorts must adapt and innovate in order to maintain or improve their visitor numbers: a proliferation of new snow sports (linked to skiing like speed riding and skijoring or non-skiing sports like snowshoeing, fat biking, Yooners, and spas or other aquatic centers) and activities (interactive nature trails, local sightseeing, cultural events) to trigger purchases and customer loyalty, expansion of services to facilitate the tourist's experience (delivery of ski passes and rented ski equipment), and a search for original solutions to fill unused beds and increase the number of visitors to the resort. In high-altitude resorts, this need for innovation is also essential to maintain attractiveness for big companies specialized in the operation of ski lifts (like Compagnie des Alpes or LaBelleMontagne) that operate in many resorts and are less attached to one territory. Finally, resorts should also opt for more environmentally friendly and "sustainable" tourism activities (Paget et al, 2010). Since they do not always have either the financial resources necessary to carry out projects alone or the creative skills that would enable them to create offerings that would truly differentiate them, mountain resorts are increasingly seeing the need to set up innovation networks (Favre-Bonté *et al.*, 2016; Falk, 2017).

Even though the literature has not yet shown interest in the relationship between the type of territory and network type, one can nevertheless legitimately consider that the characteristics of a territory could influence the form of networks. In our case studies, the theoretical framework crosses the four major characteristics of inter-organizational networks with the two types of mountain resorts (see Table 2). It has to be emphasized that the proposed categorization of innovation network characteristics is simplified, and was adopted to better understand how the territory impact the innovation network characteristic in a tourist region. Another advantage of this theoretical framework is that it allows a complete network analysis, while most research studies dyads rather than the complete network (Huggings, 2000).

		Characteristics of networks			
		Nature of the relation vertical, horizontal, or inter-industry	Regulation mode economic vs. sociological	Architecture centralized vs. decentralized	Geographic scope local national international
Type of mountain resorts	Medium-altitude resorts				
	High-altitude resorts				

Table 2: Theoretical framework

2 INNOVATION NETWORK FORM IN MOUNTAIN RESORTS: EMPIRICAL RESULTS

We first present the data collection and analysis, and then we explain and discuss the results.

2.1 Data collection and coding

To achieve the aim of the paper, a qualitative explorative research was conducted to explore the potential link between type of resort and type of innovation network, we

opted for a qualitative study based on the analysis of nine innovation networks (see Table 3). We use abductive reasoning (Martin, 2009) that combines testing (to compare the main features of the theoretical framework to empirical observations) and exploration (to understand the influence of the territory on these features). The goal of abductive reasoning is not so much about finding what is right as it is about what *could* or *might* be right. Researcher should be interested in analytic instead of statistical generalizations. An exploratory and descriptive approach can be used to form hypotheses whereas a positivist approach to test them. It means that the goal is to draw some general conclusions by uncovering patterns or theories that help understand a phenomenon rather than generalizing about population based on a sample (Czernek, 2013).

In this type of research a purposeful rather than random sample is used. In our sample, each network consists of at least three independent organizations (public or private) and concerns a particular type of innovation: new service offerings. The literature on innovation in services distinguishes three dimensions that innovations can rely on (Favre-Bonté *et al.*, 2016): back-office or internal organizational systems, front office (personnel who have face-to-face contact with the customer, the physical medium used to provide the service, etc.), and the final output (the new offering). We focused on new offerings because they are the most numerous in mountain tourism (Favre-Bonté *et al.*, 2016). Given the intensity of competition, resorts are accumulating innovations that are visible to customers, to retain regulars who are hungry for novelty and attract new customers interested in a wider variety of experiences (Goncalves, 2013).

These networks are all located in the Northern Alps, but in two types of resorts: four in medium-altitude mountains (Saint Bernard du Touvet, Saint Pierre de Chartreuse, Savoy Grand Revard, and Semnoz) and the other five developed within two large high-altitude resorts (Tignes and Avoriaz).

To triangulate our data, several collection tools were used: interviews and secondary data. We first interviewed six institutional actors who could be described as sector experts, who have helped us understand the territory (the director of Savoie Mont-Blanc Tourism, three members of the Executive Committee of Savoie Mont-Blanc Tourism, the head of the Brand Destination Savoie Mont Blanc, and the Tourism Plan coordinator of the Savoie Tourism Agency). They also facilitated our access to key actors. Sixteen semi-structured interviews, lasting an average of 3 hours, were carried out with key actors between 2011 and 2015: hub firm actors responsible for innovation, tourism office directors, ski area directors, and entrepreneurs who developed the innovations. Our interview guide was based on our analytical framework. The key themes that were discussed are: context and strategy of the resort and the role of innovation in the strategy, with a focus on the innovations studied and the networks that support them. For each innovation, we have sought to identify network members, their activity (relationship dimension), the geographical proximity between them, the network architecture, and the regulation modes used. Furthermore, external secondary data (resort websites, and press clippings on resorts and innovations developed) allowed us to have a better understanding of the innovations implemented and the territory studied.










Terri tory	Resort name	Features of the destination: altitude, accommodation capacity, occupancy rate, type of customer, lift ticket price, and number of km of ski area	Innova- tion studied	Description of the innovation
Medium-altitude mountain	Saint Pierre de Chartreuse – le Planolet	Between 900 m - 1800 m; 1 800 tourist beds Large number of day visitors (from Grenoble and Chambéry) Lift ticket: 23 € per day– 35 km of ski area	Trail running resort	 Concept that integrates marked trails and workshops dedicated to training, a home base (including changing rooms and showers) and a website that allows runners to record their results.
	Col de Marcieu (Saint Bernard du Touvet)	1100m; 250 tourist beds Almost all of the clients are day trippers (from Grenoble) Lift ticket: 13 € per day – 10 km of ski area	Natural escape	 Eco lodge center that offers educational activities on the environment
	Saint François de Sales (Savoie Grand Revard)	850 m; 3 500 tourist beds Large number of day visitors (from Chambéry) Lift ticket: 18.50 € per day – 50 km of ski area	Time investigation	 Tourist stay combining hiking with astronomy and geology
	Le Semnoz	1700 m; almost all customers are day trippers (from Annecy). The resort has a total of 15 rooms (double to quadruple) Lift ticket: 16.20 € per day – 10 km of ski area	Eco-Bivouac	 Eco-designed base camp structures including 100% recyclable and energy independent wooden chalets and six igloos
High-altitude mountain	Avoriaz	1800 – 2500 m; 17 000 tourist beds Occupancy rate: about 72% in winter, 30% in summer Customers: 52% French; 48% international Lift ticket: 40 € per day for Avoriaz only - 75 km of ski area Lift ticket: 48.50 € per day for all the Portes du Soleil resorts - 650 km of ski area	Aquariaz	 Tropical aquatic center (unique in the mountains), for both skiers and non-skiers wishing to complete their ski day with a relaxing time in the water.
			You Can Ski	 Attracts beginners through all-inclusive offers + course material. Provides these skiers with a welcome booklet and isolated and protected slopes, within walking distance.
			Multipass	 For 1 € per day, gives the customer unlimited access to a large number of activities (sports and cultural) throughout the Portes du Soleil.
			Rock the pistes (slopes)	 For five days, five concerts are held on the slopes in 5 resorts in the ski area.
	Tignes	1600 to 3450 m; 31 000 tourist beds Occupancy rate: 85% in winter, 15% in summer. Customers: 48% French; 52% international Lift ticket: 47 € per day, 83% weekly lift tickets	Bike Park	 Offers another sport activity in summer due to the melting of the glacier, which reduces the possibilities of summer skiing

Table 3: Descriptive table of innovations studied

We recorded and transcribed all the interviews and then made network maps. This visual approach clearly identifies the network structures and the links between the partners (see examples in figures 1 and 2).

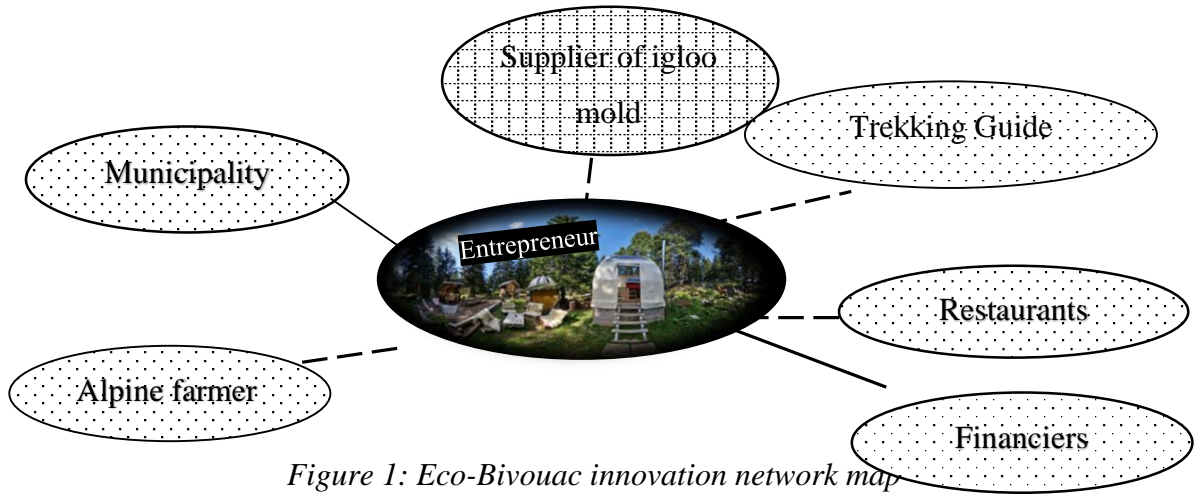


Figure 1: Eco-Bivouac innovation network map

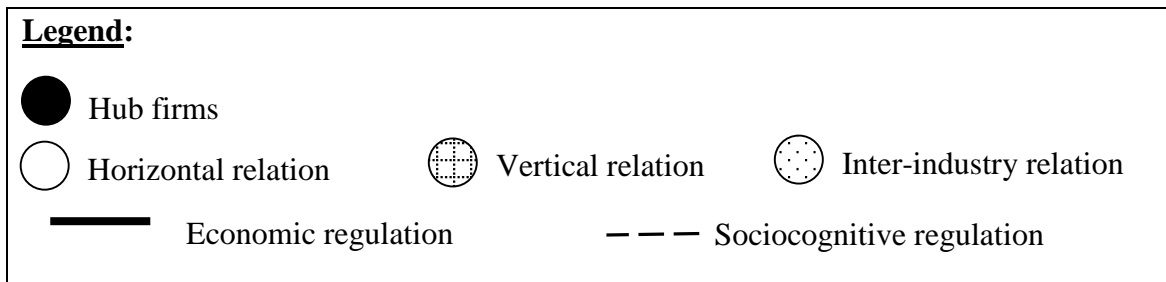
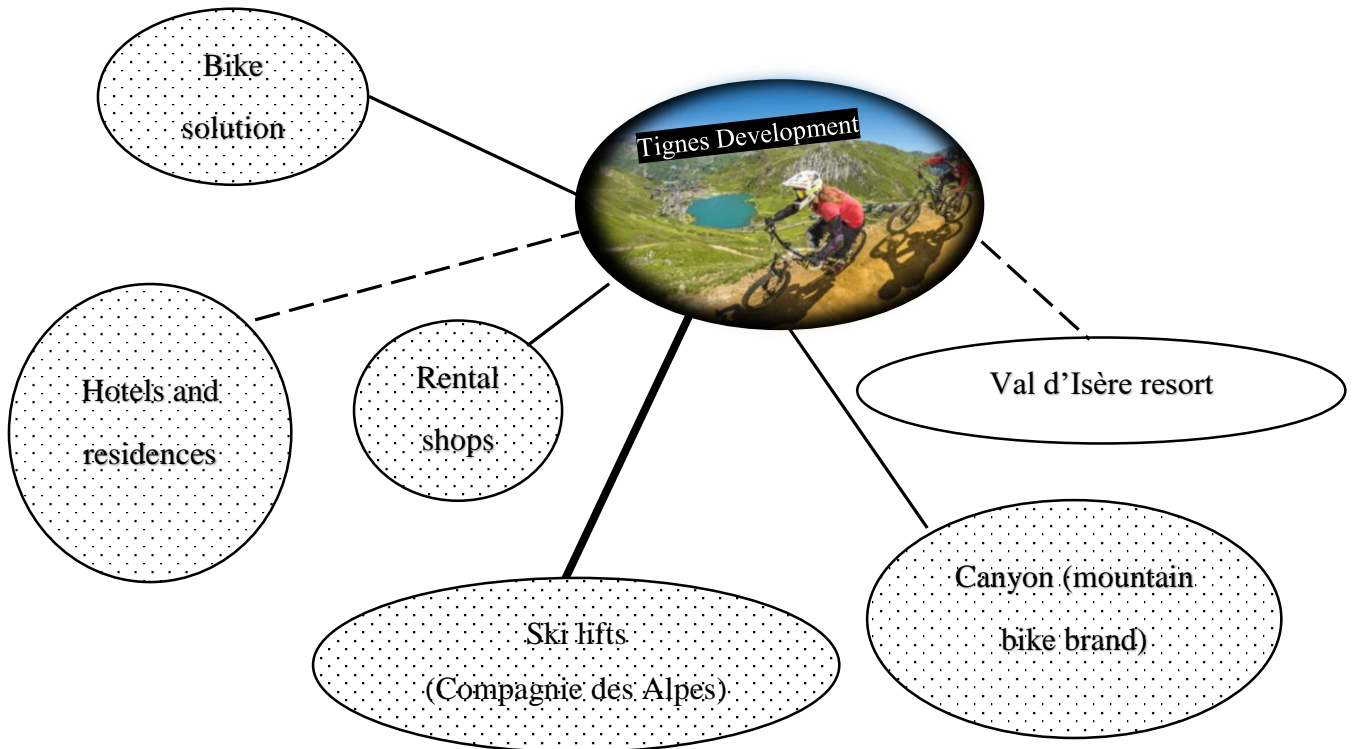


Figure 2: Bike Park network map

This visual overview also facilitates the identification of resources and expertise contributed by each partner and their roles in the network. Another objective is to facilitate the feedback on analyses. All these maps have been validated by the interviewees.

Finally, we carried out a thematic analysis. To code the data, we used a content analysis procedure (Strauss, 1987): we coded data by themes corresponding to the four components of our framework (nature of the relation, regulation mode, architecture, and geographic scope). To do so, researchers worked together to code the first interviews, to establish a coding norm, and then each researcher coded a part of the data.

We followed an iterative process between theory and data, using the literature to refine our findings and clarify our contributions. The data analyses took eight months and resulted in a theoretical model of innovation networks according to the type of resort.

2.2 Results and Discussion: Innovation networks that differ in three dimensions

Table 4 provides an overview of the characteristics of the innovation networks studied by type of resort. The analysis of this table shows real differences between medium-altitude and high-altitude innovation networks. These differences relate to three of the four dimensions of our analytical framework: the nature of relationships, geographic scope, and network modes of regulation. The architecture dimension is less impacted by the nature of the territory.

		Characteristics of studied networks			
		Nature of the relation	Regulation mode	Architecture	Geographic scope
Middle Mountain	Trail station	Inter-industry and vertical	Sociological	Centralized around the entrepreneur	Local
	Natural Escape	Inter-industry and vertical	Sociological	Centralized around the entrepreneur	Local
	Time investigation	Inter-industry and vertical	Sociological	Centralized around the entrepreneur	Local
	Eco-Bivouac	Inter-industry and vertical	Sociological	Centralized around the entrepreneur	Local
High altitude Mountain	Aquariaz	Inter-industry	Sociological	Centralized - private firm pivot of the resort	International
	You Can Ski	Inter-industry and horizontal	Economic with T.O. but Socio. locally	Centralized - Association des Portes du Soleil	International
	Multipass	Inter-industry and horizontal	Economic	Centralized - Association des Portes du Soleil	Local
	Rock the slopes	Inter-industry and horizontal	Economic	Centralized - Association des Portes du Soleil	National
	Bike Park	Inter-industry and horizontal	Economic	Centralized - Tignes development (public organization)	National

Table 4: Characteristics of innovation networks studied according to type of resort

For the first network characteristic, the **nature of relations**, we can already make the observation that the networks studied are the result of a combination of different kinds

of links (Gomes-Casseres, 2003; Beritelli, 2011): inter-industry relations plus an orientation (vertical or horizontal) that varies by territory. The high-altitude resorts develop more horizontal collaborations than do medium-altitude mountain resorts (4 out of 5 networks involved in high-altitude, 0 of 4 in medium-altitude resorts), often working with other resorts in the same ski area. This is hardly surprising given the central position of skiing in their business (Goncalves, 2013; Falk, 2017), which generally has led to cooperation with one or more other resorts in the geographic area, allowing them to extend the scope of their winter sports offerings and reap the economic benefits related to the purchase of package deals. Once implemented, these collaborations tend to continue and lead to the introduction of joint innovations. This is the case of the You Can Ski formula. The Tourism Office director of Avoriaz explains the development: “Up to now, beginners, especially adults, were not sufficiently taken into account in the ski offerings. Avoriaz has decided to adopt a policy in this area with a new package (lessons, equipment, package, and dedicated slopes) that was first named “Ski 1st slide”. Then due to the relevance of this innovation, the Association decided to extend it to the whole Portes du Soleil ski area, calling it the “You Can Ski” service”.

In the medium-altitude resorts, there are more vertical relationships between partners, allowing them to provide an integrated offering to the final customer. This is, for example, the case of the trail resort in Chartreuse, which is the result of collaboration between the Raidlight company and the Cartusiana association of mountain guides. The first sells shoes and apparel for trail running, and allows its customers to test equipment on the trail; Cartusiana, also a user of Raidlight products, supervises participants running in the mountains. This is also the case of the Eco-Bivouac (Appendix B), which was co-designed with an igloo mold supplier so that these temporary accommodations could be built quickly.

However, both types of territories converge on the fact that their networks are mostly inter-industry (transverse). This is a priori logic, since by definition a tourist stay is a service bringing together actors from different areas (accommodation providers, restaurants, ski lift companies and instructors, equipment rental agencies, and tourist offices) that need to be coordinated (Pavlovich, 2003; Gibson *et al.*, 2005; Goncalves, 2013). However, we still see a difference between the two territories. To provide novel offerings and differentiate themselves from competitors, high mountain resorts are increasingly reaching out to companies that are not part of the mountain tourism industry. For example, the Rock the Slopes innovation brought together not only the ski area actors but also a record company (Warner, through its subsidiary We Prod), a TV channel (Canal +), and a ticket distributor (Fnac). The director of the Avoriaz Tourist office also illustrates the need for openness to other sectors, explaining: "Since its fantastic film festival, Avoriaz has continued to build relationships with actors from other sectors. It is a force for innovation. "

Regarding the **regulation mode**, the economic mode is widely favored in the high-altitude resorts, to the detriment of the sociological mode that requires the establishment of trust between the ski area actors (Bargatti *et al.*, 2009). This reflects a change in the operating mode of the resorts. In fact, the mountain resorts were originally characterized by informal networks based on geographic proximity, culture, or family connections (Gerbaux and Marcelpoil, 2006). However, with the retirement of the first generation of business owners in these resorts, the arrival of outside companies more based on economic and financial considerations (Cattelin and Thevenard-Puthod, 2006), the increased competitive intensity, and the urgent need to innovate has oriented the mode of regulation increasingly towards the economic mode. This choice is also reinforced by

the fact that these networks consist of actors that are increasingly geographically distant and selected according to criteria of complementary resources and skills (Teece, *et al.* 1997). For example, the scope of the festival Rock the Slopes (distant network members in terms of industry; financial and marketing risks associated with the project) has required contracting with the distributor (FNAC) and the producer (We Prod) that in turn contracts with different artists. Moreover, it would seem that the difficulty for a ski resort to protect its innovations reinforces the rational and economic relationships among members of an innovation network (Steinicke *et al.*, 2011).

However, innovation networks developed in medium-altitude resorts continue to favor the sociological mode. The spatial proximity allows frequent communication between partners and the development of a common language that facilitates coordination, transfer of tacit knowledge, and trust relationships (Casanueva and Galan Gonzales, 2004). The four networks developed in medium-altitude resorts are characterized by the establishment of trust between network members rather than formal and contractual ties. This is the case of E. Le Berre, who developed the innovation "Time investigation" in collaboration with another mountain guide with whom he used to work and had developed a friendship. They also built a trusting relationship with a tourist accommodation center for hosting their customers and with mountain farmers for tasting of local products. As Le Berre explains, "In our business, it's still very important to work with trustworthy partners in the network." Moreover, this geographical proximity is the basis of the sustainable positioning that some entrepreneurs have chosen (Huggins and Thompson, 2015) and the assumption that the partners share the same values. This is the case of Eco-Bivouac, whose leader declares: "I made sure to choose people like me who share my vision; so except the Viuz-la-Chiésaz municipality with which we have an operating agreement, and financing institutions, there is no agreement with other partners." However, the importance of sociological modes must be considered in the context of networks localized in the same country. Some other authors have shown that in cross-border networks, the level of mutual trust between stakeholders is often low (Blasco *et al.*, 2014). Partners may be embedded in regional structures and cooperation may remain nationally bounded, generating resistance tactics. The existence of separate political units can hamper the development of a unique regional identity and a saleable market brand.

In our sample, the **architectural dimension** of the network does not vary depending on territory. Indeed, there is a systematic presence of a pivot within networks. This is partly explained by the fact that certain territories are already centralized around at least one key organization: a hospitality company (Pierre et Vacances in Avoriaz), Natural Regional Park (Chartreuse, Bauges), or ski lift company (Compagnie des Alpes in Tignes). Another explanation comes from the recent difficulties of winter sports resorts. In the past, as they used to enjoy a long-term growing market, local actors often tended to operate in isolation. Today, given the competitive intensity and trends in the mountain tourism market, the presence of a hub firm seems necessary to stimulate the innovation process and move all stakeholders towards more collaboration (Bieger and Weinert, 2006).

The characteristics of the hub organization look different depending on if it is a medium-altitude or high-altitude resort. In the latter, despite the presence of private companies (Pierre et Vacances, Compagnie des Alpes), it is often the local associations and sometimes the public sector (Tourist Office, Association of the Portes du Soleil) that represent the driving stakeholder in the tourist innovation networks, as previously highlighted in the literature on other tourist destinations (Evans *et al.*, 1995;

Maniukiewicz *et al.*, 1999; Hjalager, 2010). For example, in the context of Rock the Slopes, the impulse of the innovation project came from the Portes du Soleil association, whose primary goal was to boost the ski area and attract new customers to the territory during off-peak seasons. More generally, the role of this association is to increase "Portes du Soleil" brand awareness, via internal communication with local actors and external communication with customers. The decisive role played by the hub firm have already been highlighted by Blasco *et al.* (2014) in cross-border tourism networks, who also indicate the important influence of the structure type on the duration of the cooperation. In their study, attempts made among private actors tend to last longer or become permanent, while those initiated by public administration are more ephemeral. This is not the case in our study where local institutions play a long-term influence on the innovation networks.

On the other hand, in the four medium-altitude resorts in our sample, the impulse and development of innovation is still often the work of an individual and/or small business. Generally these are promoters who call upon their social networks to develop their innovative projects (Borgatti *et al.*, 2009). Several researchers have highlighted the role of entrepreneurs and their social networks in the creation of new tourist destinations (Tinsley and Lynch, 2001; Johns and Mattsson, 2005). Our work here shows that these entrepreneurs are initially quite active in the medium-altitude resorts, attracting and uniting several individuals in the resort community. If the project finds consensus and grows, a public institution will then assist the initial hub organization. This is particularly the case in resorts that are located within regional parks. Thus the manager of the Regional Natural Park of Chartreuse says, "Today we have a common place, the trail resort, supported by the municipality, the Community of Municipalities and the Park as honorary members, and Raidlight company. And we are trying to develop this trail resort concept as a concept that is not static but changes almost every year." In the medium-altitude resorts, tourism is often sustained by social networks that explicitly link local actors for the purpose of jointly promoting and maintaining the economic, social, cultural, natural, and human resources of the localities in which they occur (Saxena and Ilbery, 2008).

The final difference in network characteristics relates to the **geographic scope**. Previously, high-altitude tourism destinations had a very circumscribed geographical function and were sometimes treated as localized productive systems, very much embedded in their territory (Paget *et al.*, 2010). In the networks we studied, the partners are predominantly (in 4 out of 5 networks) located in other parts of France or abroad. The presence of nationwide private actors could easily explain this development (Compagnie des Alpes and Pierre et Vacances being international companies). However, the explanation is also to be found elsewhere. It is not enough to ally with local stakeholders to develop a competitive advantage in these territories: local actors must also find creative partners who can contribute new resources and skills that are not necessarily located in the resorts. Allying with foreign partners is also a way to internationalize customers (Williams and Shaw, 2011) and thus find new sources of growth abroad, given that French customers are less eager to stay in the country for winter sports. The role of foreign tour operators is also essential here. Thus in high altitude resorts, the interest of geographical proximity seems to be minimized (Autant-Bernard, 2001; Fritsch and Lukas, 2001): the transfer of certain types of knowledge, skills, and resources does not necessarily require geographic proximity. Referring to the theory of social networks, this result refers to the idea that strong ties (made possible in particular by geographical proximity) may limit the emergence of new ideas while weak

ties (often with less geographic proximity) can multiply the sources of information and foster innovation (Elango, 2004). As such, Boschma (2005) has showed that the embedding of social relations has a positive effect on innovation to a certain stage and then acts as a barrier to innovation.

However, when it comes to innovations developed in medium-altitude resorts, in 4 cases there is a local scope, with actors from the same geographic area working in cooperation. This is certainly due to the actor who has initiated the innovation project: usually this is an individual concerned with local problems who, in accordance with his original project and his values, strives to live and revitalize this territory by favoring local practices (Huggins and Thompson, 2015). His strong attachment to the territory also results in a relatively strong involvement in local life. The business leaders we interviewed have chosen to settle and live near their place where they work. E. Le Berre says: "I live in the Bauges because I feel good. I think there are many things to do there." This is in line with the study of Huggins and Thompson (2015) that shows that through its location, the company relies on a personal attachment to the land that goes beyond purely economic issues.

Thus, the personal network, considered as all the individual's personal relationships, seems to play a major role in the construction of these networks, as is often the case in small structures where the leader plays a central role (Favre-Bonté and Tran, 2015). This is the case of the Natural Escape entrepreneur who, from the start, was determined to create an eco-tourism site: guests are accommodated in ecological houses, and can receive sustainable development training and information about the natural habitat through a partnership with the association Relay of the Chartreuse. This is also the case of Eco-Bivouac, which brings together restaurants, mountain farmers, and mountain guides within the resort area, as well as local suppliers and financial partners. "With the Eco-Bivouac project, I really wanted to boost the local mountain environment during all four seasons (not just during winter), and it was important for me to propose a global tourism offer with only local actors," said its manager.

Table 5 summarizes the results of the influence of territory on the characteristics of innovation networks. It highlights the main configurations observed through the nine innovation networks studied and thus provides the basis for a model to be tested quantitatively, on a larger sample size.

		Characteristics of networks			
		Nature of the relation (horizontal/vertical / inter-industry)	Mode of regulation (economic / sociological)	Architecture (centralized / decentralized)	Geographic Scope (local / national / international network)
Type of resorts	<i>Medium-altitude resort</i>	Inter-industry (linked) and vertical	Sociological	Centralized around an entrepreneur	Local
	<i>High-altitude resort</i>	Inter-industry (distant) and horizontal	Economic	Centralized around an institution and/or a private firm	National to international

Table 5: Network characteristics according to type of resort

CONCLUSION

This research aimed to show the link between territory (here high- or medium-altitude mountain resorts) and characteristics of innovation networks. This study of nine networks shows the influence of the type of resort on three out of four network characteristics: the nature of relationships (vertical and inter-industry for the medium-altitude resorts vs. horizontal and "distant" inter-industry for the high-altitude results), regulation modes (sociological for medium-altitude vs. economic for high-altitude) and geographic scope (local for medium-altitude vs. national or international for high-altitude). However, the type of resort does not appear to influence the network architecture, which is centralized in all cases. Our results also highlight that while innovation is sometimes a reality thanks to a certain geographical proximity, it may also be important to build external links in order to remain competitive and offer more innovative services (Falk, 2017).

As innovation is a growth driver for many territories, at the managerial level, a better understanding of network characteristics depending on territory type can help businesses develop appropriate relationships and allow them to generate a sustainable competitive advantage through innovation (Huggins and Thompson, 2015). These destinations should be aware of the important role of the hub organization in the innovation process, an actor who is often represented by the Tourism Office (or possibly another local institution) in high-altitude resorts and an entrepreneur in medium-altitude resorts. High-altitude resorts must also understand the value of openness to partners outside the territory (companies outside the tourism sector and/or geographically distant) to innovate. It is notably the opening of the network to these "novel" partners that facilitates the design and implementation of innovations that are more difficult to imitate.

Beyond the traditional limitations associated with qualitative methodologies, this research raises three other limitations. First, the choice of mountain resorts as the study field raises the question of the extension of those results to other territories. Second, the network analysis performed is relatively static and was performed retrospectively. It therefore does not capture any possible evolutions in the networks during the development and commercialization of an innovation. Third, we do not distinguish the degree of novelty of the new offer or the type of skills needed for innovation. Given the degree of uncertainty that increases with the degree of novelty, it is likely that network characteristics will vary depending on the degree of innovation.

Future work could therefore usefully complement this research by extending our analytical framework to other types of tourist destinations. In this research, we limited our analysis to the level of inter-organizational networks. Future work could also propose a multilevel analysis, integrating interpersonal relations and the effects that these may have on the construction of inter-organizational networks. Finally, it would be interesting to adopt a longitudinal approach to better understand the logic behind the formation of networks within a destination and study the evolution of these network characteristics.

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