INNOVATIVE INTEGRATION IN TOURISM

ABSTRACT

The differentiation of tourism destinations depends on the innovative integration of local cultural and natural characteristics of the territory into the regional touristic supply. A panel data model is used to identify – and to confirm – the influence of these “new” conditions for sustainable tourism development in the regional attractiveness in Southwest Europe, between 2003 and 2008. Other “traditional conditions” are also taken into consideration, namely those related to infrastructures and economic conditions. The work includes a critical literature review on the regional tourism systems, their relation with regional systems of innovation and the contribution of natural and cultural assets for the differentiation of tourism destinations.

Keywords: Tourism; Innovation; Differentiation; Nature; Heritage; Region

RESUMO

A diferenciação dos destinos de turismo depende da integração inovadora das características naturais e culturais do território na oferta turística regional. Um modelo de dados em painel é usado neste trabalho para identificar – e confirmar – a influência destas “novas” condições para o desenvolvimento sustentável do turismo sobre a atractividade regional do turismo no sudoeste europeu, entre 2003 e 2008. Outras “condições tradicionais” para o desenvolvimento do turismo foram também consideradas, tais como as relacionadas com infraestruturas, condições económicas ou performance de destinos concorrentes. Este trabalho inclui uma revisão crítica da literatura sobre sistemas regionais de turismo, a sua relação com os sistemas regionais de inovação e o contributo dos factores culturais e naturais para a diferenciação dos destinos turísticos.

Palavras-chave: Turismo; Inovação; Diferenciação; Natureza; Herança; Região

JEL Classification: O33; C23; Q56

1. INTRODUCTION

The sustainability of tourism development should be based on the local differentiation of tourism supply based, in turn, on the cultural and natural characteristics of the destination, as proposed by recent international policies for the tourism industry (European Commission, 2006a; UNESCO, 2005; UNWTO, 2006; World Economic Forum, 2008; World Travel and
Tourism Council, 2006). The hypothesis to be discussed in this work is whether regions where elements related to heritage and natural conditions are successfully incorporated through innovative products and services into the tourism supply are able to sustain their levels of attractiveness.

A regional tourism demand function is developed, based on a panel data model, where determinants related to innovation and others generally related to tourism activities are used to explain the attractiveness of tourism destinations in Southwest Europe (measured by the number of nights spent in hotel accommodation in each region). Variables related to innovation include the regional efforts in research and development activities and the regional specific resources related to natural and cultural heritage that may be used to develop innovative products and services that contribute to the differentiation of tourism destinations.

Since the region is the basic unit for this study, the regional touristic systems and the factors that influence innovation in tourism are first analysed. Market dynamics and science and technology systems at the regional level (NUTS 2) will be considered. This territorial unit is important for administrative and political purposes, for the creation of regional networks, for the concept of tourism experience as a result of a large set of products and services locally provided and the availability of relevant statistical data. Local and regional specific elements that may characterise the differentiation of tourism destinations will be discussed, such as those related to natural resources and cultural heritage, with their particular limits and sensitiveness. Finally, the methodology, the panel data model results, the conclusions and some possible future developments of this work will be presented.

2. TERRITORY, INNOVATION AND TOURISM

2.1. Regional Tourism Systems

Tourism is an increasingly important economic activity with major impacts on regional economic development, employment and society. The strong growth of tourism since the middle of the twentieth century is explained by the generalization of the right to paid holidays (allowing for the massification of tourism, with positive impacts on local economies but often negative impacts on natural and cultural assets), reduction of work time, increasing revenues, globalization, improvements in transport systems, technological innovations (namely those related to information and communication) or demographic changes (Wall and Mathieson, 2006). Nevertheless, as tourism is a luxurious and voluntary activity, an economic crisis, a fuel crisis (or fluctuation in the fuel prices), insecurity (at the local or global levels) or pandemics can have a strong negative impact in the development of tourism activities and on local economies, mostly if we take into consideration that tourism products and services are largely provided by small companies, less protected against long periods of recession (European Commission, 2006a).

The definition of “tourism” evolved over the last decades (Vanhove, 2005), and it is now commonly accepted that it includes a dynamic element (temporary travel), a static element (staying in a specific destination outside the tourist’s normal place of work and residence), economic consequences (facilities and services provided) and a result of a large set of products and services locally provided (production and consumption occur necessarily at the same time and in the same place). A comprehensive approach to the tourism system (Richie and Crouch, 2005) includes “competitive (micro) environment” and “global (macro) environment” conditions at five different levels: “Supporting factors and resources”, “Core resources and attractors”, “Destination Management”, “Destination Policy, Planning and Development” and “Qualifying and Amplifying Determinants”. Over the last years, the
Tourism services are provided by a large quantity and variety of companies, such as tour operators, travel agencies or airline companies. Most of these services are now available on the internet (allowing tourists to collect information, organize travels, make reservations and pay for the services using websites), implying a more sophisticated production of information and interaction with costumers, who became increasingly more autonomous. Accommodation (in different kinds and categories of establishments), restaurants, night-life and transportation services play a decisive role in each tourism destination, although they are not the most important determinants of the attractiveness of a place. Other services that are not exclusively oriented for tourism can play a determinant role on the attractiveness of a tourism destination, including those related to natural resources, heritage sites, tangible or intangible cultural elements, cultural or sporting events, recreational or educational activities, infra-structures or other attractions.

Consequently, the quality of the experience depends on the satisfaction obtained from a large set of products and services provided in each destination and may vary with the characteristics, expectations and motivations of each tourist (Scott, et al., 2009; Romão et al, 2013). Local cultural aspects must be included in the tourism supply and will be used by consumers with different cultural values (Jafari and Way, 1994). This systematic approach has important implications on the image, marketing and promotion because each destination has its own history and evolution, which also leads to the relation between tourism destination and the characteristics of the territory, which is central to this work (Formica and Kothari, 2008; Kozak and Rimmington, 1999).

On the other hand, the heterogeneity of contemporary tourists’ preferences is accomplished by the heterogeneity of tourism destinations (Hassan, 2000). As tourism destinations compete with rivals all over the world in order to attract consumers who are distributed globally, questions relating to positioning and branding tourism products and services become increasingly important, implying place audits, definition of visions and goals and strategic market plans that also take into consideration the past evolution of the tourism destinations (Kotler et al., 2005).

Tourism destinations are multiproduct areas for multi-segment markets, with multi-clients from multi-origins and their multi-motivations. Big international companies (like tour operators or airlines) interact with local small product and service providers (accommodation, restaurants, bars, cultural activities, organized tours, etc.) and increasingly interact with consumers from all over the world. The coordination of promotional activities and control over limited or sensitive assets require an active intervention from Destination Management Organizations and interaction with other institutions, in order to clearly identify and promote the different experiences that may be offered based on local specific resources and oriented towards the needs and motivations of particular consumers.
2.2. Innovation in Tourism

As the concept of tourism destination relies on the idea of a network of cooperatively provided services at the local level in order to satisfy the needs and expectations of the visitors (Daskalopoulou and Petrou, 2009), innovation in tourism results from all interactions between companies (large and small, with different purposes), among firms and consumers (taking benefits from the increasing interactivity), from technological developments resulting from the cooperation between tourism companies and R&D institutions or even from outside tourism, like the developments of information and communication technologies (Ramos and Rodrigues, 2011). As tourism supply (and demand) is becoming increasingly complex and incorporating more specific information about different destinations, using technologically sophisticated means of communication, tourism is an increasingly knowledge based economic activity that is globally distributed, where innovations can have a global diffusion (Millar and Choi, 2011).

Although these processes of innovation tend to spread faster when there is more interaction between local firms and R&D institutions, considering the global character of tourism activities, the importance of international companies and the possibility for the innovative services to be shared or known on the internet, they can easily spread from a touristic region to others. Nevertheless, the processes of innovation related to the development of products and services based on local specific resources cannot be imitated, and they can definitely contribute to the differentiation of a tourism destination. On the other hand, the local interaction between producers and consumers in a specific territory enhances the importance of local and regional innovation networks for tourism products and services (Williams and Shaw, 2011).

Consequently, the processes of innovation in tourism depend on the creation of regional networks for common learning (European Commission, 2006b). The concept “learning-area” as a network is reinforced by the idea that technological developments in information and communication have a relevant impact on innovation, namely in the tourism sector, where the overall product is delivered in a fragmented way by multiple small providers (Davie et al., 2002). The fact that tourism is one of the most globalized economic activities does not reduce the importance of local networks (Asheim and Coenen, 2006). Nevertheless, processes
of regional innovation do not rely only on the technological conditions of each place but also on other conditions that can stimulate the processes of communication, cooperation and co-learning in each region (Pinto and Guerreiro, 2010; Pinto and Rodrigues, 2010). Innovation is a path-dependent process where “history matters” (Malakauskaite, 2010) and an evolutionary process where institutions are, themselves, subject to evolution (Steiner, 2006), combining continuity (existing elements) and radical change (new combination) (Lundvall, 2002).

Local and regional networks can be systematized in different theoretical perspectives: industrial districts, new industrial spaces, local or regional production systems, local and regional innovation systems, learning regions or clusters are different approaches that can be applied to the local and regional tourism systems (Asheim and Coenen, 2006). These networks have relevant impacts on productivity, innovation and creation of new businesses related to touristic activities and reinforce the mechanisms of transformation of knowledge into innovative products and services, which can be embedded, tacit, localised or research based, in order to create new products or services, new processes, new managerial practices, new management methods or new institutional solutions (Hjalager, 2010). Tacit knowledge is the most difficult to incorporate in an organization but also the most difficult to imitate, and it has favourable conditions in tourism, given the co-terminality (interaction between consumers and providers), spatiality (consumption and production occur in the same place) and temporality (consumption and production occur at the same time) of tourism services. Connectivity between tourism service providers and between them and consumers is highly enhanced by the developments in information and communication technologies, reinforcing the importance of networks for innovation in tourism (Simmie, 2006).

These characteristics also show the systematic character of innovation in tourism (Hall et al., 2008): a tourism destination includes a large group of products and services, provided by different enterprises and public institutions, most of the time not only related with tourists but also with local communities. This characteristic of tourism implies a greater effort to coordinate networks of different kind of institutions, with different purposes: strong regional coordination and cooperation among stakeholders is of particular importance to facilitate the processes of innovation and can contribute to the reinforcement of the uniqueness of each destination.

The extraordinary evolution of information and communication technologies over the last three decades also had profound implications on tourism activities, which have a very intensive use of information on services and destinations. These implications are even more relevant if we consider the importance of making decisions on travelling to distant places that consumers, most of the times, do not know. Finally, travelling decisions are mostly made well before the travel occurs, which implies the necessary reservations of transports, accommodation and other services before the services are used.

Consequently, Computer Reservation Systems (CRSs), Global Distribution Systems (GDSs) and internet imposed important changes in practices, strategies and industry structures: technological developments related to the efficiency of search engines or the carrying capacity and speed of communication networks changed the way a large number of tourists plan and organize their travels. On the other hand, these developments on information and communication technologies had an important positive effect on the efficiency and effectiveness of tourism organizations and their interactions with tourists. In fact, considering the close link between tourism activities and territories, developments in Geographical Information Systems have created new opportunities for tourism marketing and promotion (Chang and Caneday, 2011). Analyzing the technological developments in Information and Communication Technologies applied to tourism activities, Aldebert et al. (2011) emphasize the importance of infography and design (since 2003), new and
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more interactive software solutions (since 2005), massification of the internet (since 2005), massification of mobile phones (since 2006) and Web 2.0 (since 2008). Sigala (2010) stresses the new possibilities to personalize the processes of communication and to enhance the possibilities to develop Costumer Relation Management (CRM) strategies linked to the emergence and massification of the social networks (Web 2.0).

Web 2.0 also increased the mediatisation of tourism, enlarging the possibilities for tourists to produce information in different media about tourism destinations (Mansson, 2011): the tourist can collect information from multiple sources before the visit and produce his/her own information during and after the visit. This process of convergence (Jenkins, 2006) implies an interdependence between different media supports and multiple ways of accessing media content. Recent works analyzing these new tendencies have shown, for example, that the generalization of social networks tends to significantly reduce the role of the informative websites managed by Destination Management Organizations (Parra-Lopez et al., 2011). Other studies have focused attention on the descriptions of travels in personal blogs (Lyn, 2006) or photography websites (Lo, 2011), showing the diversity of independent and complex information available for the tourists when they choose a destination.

It is possible to say that the developments in information and communication technologies created a new paradigm in the tourism industry, contributing to a generalized reorganization of processes and creating new opportunities and threats: tourists can easily access accurate and reliable information about services, products and destinations or make reservations without costs or losing time, which contributes to improved quality and satisfaction. Recent studies analyse the impacts of these technological developments in information and communication technologies on urban tourists’ behaviour (e.g., Neuts et al., 2012; Romão et al., 2013).

2.3. Territory and Differentiation

These technological developments are opening new opportunities for tourism development in many regions of the world. The possibility to provide precise and attractive information about the characteristics of each territory, namely on their cultural traditions, heritage sites and natural resources, contributes to create specialized products for specific visitors: technological developments are a very important tool in order to create differentiated markets, adjusted to the local characteristics, in order to attract specific segments of a global market. Nevertheless, it is also necessary to take into consideration that specific local resources related to natural or cultural aspects of the territory are generally very sensitive to the excess of usage, implying the need for some measures that ensure an adequate number of visitors, considering the “carrying capacity” of each site and the cost of preservation: a level of utilization that ensures economic benefits in the short and long run, and that allows the destination to keep the original characteristics that makes it attractive. Consequently, the exploitation of local natural and cultural resources for tourism activities must take into consideration their preservation in the long run and the value that these assets represent for local communities (Romão et al., 2012 b).

The definition of international standards for the touristic utilization of cultural and natural sites, like the registration of a place as a World Heritage site classified by UNESCO, can promote a better protection and a more sustainable use of resources, but it can also have relevant negative impacts resulting from an excess of usage (UNESCO, 2005). This also requires a process of careful and detailed planning involving tourism companies and regulatory institutions. Another important question related to cultural heritage is related to the authenticity and commodification of cultural resources and their use for touristic purposes, although it may have an important contribution towards the preservation of traditional activities. Heritage is a representation of History and this subjective collective memory, permanently under discussion and reconstruction, is a result of political and
ideological conflictive perspectives (Harrison, 2005). Heritage must be accessible to enrich the touristic experiences of visitors but must also be connected with the values of local communities. Consequently, it is highly desirable that local stakeholders have an active participation in the processes of planning, development and implementation of tourism activities (Evans, 2005).

The differentiation of tourism destinations that ensures the attractiveness of a destination in the long-run depends on the promotion of innovative products and services related to the natural and cultural characteristics of the territory. This kind of development allows the destination to assume a monopolistic competition with other destinations, based on differentiation, instead of a cost-leadership competition, which would have smaller impacts on the local economies and larger impacts on natural and cultural resources. Finally, and taking into consideration the importance of spreading benefits among local stakeholders, promoting interaction between tourists and local communities contributes to ensure appropriate conditions for long term tourism development, enhancing local social cohesion.

3. INNOVATION AND REGIONAL TOURISM DEMAND: A PANEL-DATA APPROACH

In this paper, the regional tourism performance in south-western European countries has been analysed using a panel data model (Baltagi and Coenen, 2006; Elhorst, 2003) considering the evolution of tourism demand and its determinants from 2003 to 2008. 67 regions (NUTS 2) were considered: 17 in Spain (excluding Ceuta and Melilla, due to their particular situation and lack of some data), 22 in France (excluding Guadalupe, Martinique, Guyane and Reunion, due to their geographical localization), 21 in Italy and 7 in Portugal (Romão et al., 2012 c). The statistical information used in this work was collected from national and international official statistics institutions: Eurostat; European Commission - Environment DG; UNESCO; InstitutoNacional de Estatística (Portugal); InstitutoNacional de Estadística (Spain); Institut National de la Statistique et des ÉtudesÉconomiques (France); IstitutoNazionale di Statistica (Italy). The models were estimated in R 2.10.1 for Mac OS (Croissant and Millo, 2008) and maps were produced with ArcGis 10 for Windows Vista.

Although tourism destinations can have different geographical limits, for the purposes of this study the “region” (NUTS 2, according to the European classification) has been considered as the unit of analysis. The advantages of this option are related with the availability of statistical information and the existence of relevant administrative and political institutions responsible for the management and promotion of tourism activities at the regional level.

The main purpose of this analysis is to understand if natural and cultural resources have a positive impact on regional tourism demand, assuming that these specific local assets may contribute to differentiate destinations if they are based on innovative products and services. In this sense, natural and cultural resources (as potential tourism products) and regional efforts on innovation (as a proxy for the dynamics of the regional innovation systems) are classified as “Innovation Conditions” for regional tourism attractiveness.

On the other hand, other elements of the regional tourism systems, classified in this model as “General Conditions”, are taken into consideration, trying to obtain a comprehensive perspective of the factors that influence the attractiveness of tourism destinations and considering the availability of comparable statistical data. The evolution of demand in rival destinations (Southeast European countries), economic conditions (investment in the previous year in the tourism sector and evolution of national and international markets),
availability of infrastructures for accommodation and international mobility, and qualification of human resources were taken into consideration in this model.

The number of nights spent by tourists in hotels and similar establishments in each region ("Nights") is used as a proxy for regional touristic attractiveness. From the data it was observed that the explanatory variables include data related to some general conditions for the regional development of tourism:

- infrastructures available at the regional level – “Beds” (number of beds in hotels and similar establishments) and “Air” (existence of international airports);
- economic conditions – “GDP” and “GDP_UE15” (evolution of GDP at national and EU-15 level) and “Invest” (investment in hotels and restaurants);
- demand in competing markets – “Rivals” (number of nights in hotels from Turkey, Greece, Croatia and Cyprus);
- qualifications – “Educ” (percentage of the regional population with tertiary education).

Two dummy variables were included in the model, one related with the geographical situation of each region (“GEO”: inland, south coast or west coast) and the other with the position in the tourism area life cycle (“TALC”: exploitation, development or stagnation), which has been estimated in two steps, considering three stages (Butler, 1980; Romão et al., 2012a):

- the regions with annual growth rate above 2.5% were considered in “Development”;
- for the other regions, a Location Quotient has been calculated, dividing the weight of the employment in hotels and restaurants in each region by the weight of the employment in hotels and restaurants in the overall area being analysed; it was assumed that a Location Quotient above 1 implies a high level of specialization in tourism (“Stagnation” stage) and a Location Quotient below 1 suggests that tourism activities are not so important in those regions (“Exploitation” areas).
Finally, three variables related to innovation were considered, assuming that local natural and cultural assets are the basis for the differentiation of tourism destinations according to the characteristics of the territory. It is important to notice that availability of these assets does not necessarily mean that they are exploited as tourism resources, but it means that such potential exists at the regional level and that their exploitation implies an effort for the development of innovative products and services:

- efforts on innovation (measuring the development of the regional systems of innovation);
- availability of cultural assets (number of heritage sites classified by UNESCO);
- availability of natural assets (environmentally protected areas).

The regional efforts for innovation (“ST”) were measured using the percentage of the work force involved in Scientific and Technological activities. This variable is used as a proxy to measure the interactions at the regional level between the tourism companies, consumers, suppliers and other entities of the scientific and technological system (Figure 1), and it was possible to observe that:

- 17 regions had more than 45% of the active population involved in R&D activities in 2008 (9 in France, 7 in Spain, 1 in Italy);
- 16 regions had 35% or less of their active population in R&D activities in 2008 (8 in Italy, 2 in Spain, 6 in Portugal).

The regional cultural assets (“Heritage”) that contribute to the identity of tourism destinations have been measured considering the number of heritage sites classified by UNESCO, assuming that the inclusion of classified heritage sites in the regional tourism supply is one of the means to develop innovation activities that can lead to the differentiation of tourism destinations. It was possible to observe that:
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- 11 regions have 5 or more classified sites (3 in Spain, 4 in France, 5 in Italy);
- 7 regions have no heritage sites recognized by this organization (Algarve, in Portugal, and 6 Italian regions).

In the same sense, the natural resources ("Natura") were evaluated considering the proportion of protected areas included in Natura 2000 in the regional territories. These resources require innovative activities for sustainable touristic exploitation and imply a particular attention to the pressures imposed on the territory, namely those related to number of visitors. 11 regions have more than 30% of its area in Natura 2000 (5 in Spain, 2 in France, 2 in Portugal, 2 in Italy).

These two variables ("Natura" and "Heritage") measure the importance of the characteristics of the territory for regional innovation in tourism (Figure 1).

Several random effects models were estimated, and it was possible to observe that the best results were obtained with a "Pooling Effects" Model. The variables “Nights”, “Beds”, “Invest”, “GDP”, “GDP_EU15” and “Rivals” were logarithmised. It was also observed that the variables “GDP_EU15 level”, “Rivals” and “Educ” were not statistically significant.

The final model is expressed as:

\[
\text{Lognights}_{it} = \beta_0 + \beta_1 \log\text{beds}_{it} + \beta_2 \text{air}_{it} + \beta_3 \log\text{invest}_{it-1} + \beta_4 \log\text{GDP}_{it} + \beta_5 \text{ST}_{it} + \beta_6 \text{Heritage}_{it} + \beta_7 \text{Natura}_{it} + \beta_8 \text{GEO1}_{it} + \beta_9 \text{GEO2}_{it} + \beta_{10} \text{TALC 1}_{it} + \beta_{11} \text{TALC 2}_{it}
\]
The parameter estimates obtained are presented in the following table:

Table 1: Panel Data Model Estimations

|   | Estimate | St. Error | t-value | Pr(>|t|)   |
|---|----------|-----------|---------|------------|
| $\beta_0$ | 13.82722 | 1.19577 | 11.5635 | $<2.2e^{-16}$ |
| $\beta_1$ | 0.70682 | 0.02825 | 25.0186 | $<2.2e^{-16}$ |
| $\beta_2$ | 0.13708 | 0.04335 | 3.1619 | 0.00169 |
| $\beta_3$ | 0.23912 | 0.02206 | 10.8385 | $<2.2e^{-16}$ |
| $\beta_4$ | -0.93440 | 0.12630 | -7.3984 | $8.531e^{-13}$ |
| $\beta_5$ | 1.12374 | 0.22830 | 5.0099 | $8.272e^{-7}$ |
| $\beta_6$ | 0.02378 | 0.00939 | 2.7467 | 0.00630 |
| $\beta_7$ | 0.68802 | 0.19776 | 3.4791 | 0.00056 |
| $\beta_8$ | -0.06182 | 0.03823 | -1.6173 | 0.10661 |
| $\beta_9$ | -0.29830 | 0.04416 | -6.7558 | $5.184e^{-11}$ |
| $\beta_{10}$ | -0.27510 | 0.04359 | -6.3116 | $7.516e^{-10}$ |
| $\beta_{11}$ | -0.22706 | 0.04389 | -5.1735 | $3.681e^{-7}$ |

From Table 1 it is possible to observe the statistical significance of the variables considered, even for the variable Geo1 (close to the limit of 10%). The negative correlation between the nights spent in a region and the level of its national GDP shows that countries where tourism is more important are economically less developed and also indicates that this variable was not relevant to identify the influence of national economies on domestic tourism demand. A positive relation between the attractiveness of the regions, the other basic conditions for the regional touristic attractiveness considered in the model and the three variables used to measure the innovative efforts to differentiate tourism supply based on local resources was also identified: “ST” (regional work force involved in scientific and technologic activities), “Heritage” (number of sites classified by UNESCO) and “Natura” (natural protected areas).

4. CONCLUSIONS AND DISCUSSION

4.1. General conclusions
The most important conclusion that arises from this analysis is that the conditions for innovation in tourism activities play an important role on the attractiveness of tourism destinations of Southwest Europe. A positive statistical relation between the efforts on innovation and the regional touristic attractiveness suggests that regions with more developed innovation networks are using this competitive advantage in order to create innovative tourism products and services that reinforce regional attractiveness; local specific natural and cultural resources are used as core elements of touristic attractiveness, contributing to the differentiation of tourism destinations.

Consequently, it is possible to consider that, as a general tendency, south-western European regions are successfully integrating the specific characteristics of their territories in order to differentiate the products being offered, contributing to the achievement of commodity tourism areas and for a competition based rather on differentiation than on cost leadership, creating more benefits for local stakeholders and implying less degradation of local resources. Similarly, it is possible to conclude that these regions tend to compete on the basis of monopolistic competition.
This process also implies an effort in the definition of an adequate promotion strategy and a correct positioning of the touristic products, taking into consideration target markets but also past evolution of each destination, which is a particularly relevant aspect in regions in the later stages of the life-cycle of the touristic products, where mass tourism imposed severe degradation of local resources and requires a re-positioning of the tourism destination.

Nevertheless, it must be taken into consideration that the NUTS 2 regions used as the unit of analysis in this work do not clearly show the situation in all specific tourism destinations, considering that each region can include more than one destination, possibly with very different characteristics. Even if the general observations show a clear link between innovation, differentiation and attractiveness, it is still possible that some destinations base their attractiveness on massive exploitation of non-differentiated resources, products and services (like sun and sea).

This work also shows the importance of other general conditions for regional tourism attractiveness, namely those related to the availability of touristic infrastructures (accommodation and airports) or the regional investment in the tourism sector.

4.2. Discussion and developments
The results of the model motivate its extension by enlarging the regions and the period under analysis, including the most recent years. This new approach may contribute to identify the different impacts of the international economic crisis on tourism destinations and to compare the evolution of the attractiveness in tourism regions with different characteristics: in this case, we are considering countries with similar climate and cultural conditions, but it would be interesting to include regions from other European countries, with different tourism products.

On the other hand, the fact that this analysis does not show a significant impact of the evolution of demand in rival destinations does not mean that these impacts may not occur in the future. Further developments of this work will include the observation of other features that may have a relevant impact on the performance of tourism destinations, namely those related to prices, origins and characteristics of visitors (markets), destination management and promotion or involvement of local communities in the process of tourism development. Questions related to the excessive usage of natural resources or commodification of cultural community values were also not taken into consideration and can be important elements to consider in other works.

Finally, the process of innovation itself can be analysed in greater detail, trying to identify the regional impacts of usage of communication and information technologies in tourism activities or the regional capacity to produce new technological solutions for tourism (namely considering the number of registered patents). Nevertheless, the availability of statistically comparable data for the regions under analysis must be taken into consideration, which can imply the use of other methodologies and other types of data (like qualitative information).

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