TOURISM AND TERRITORIAL DIFFERENTIATION:

AN ANALYSIS OF THE COMPETITIVENESS AND SUSTAINABILITY OF TOURISM

PHD PROGRAM IN TOURISM

JOÃO ROMÃO

UNIVERSITY OF ALGARVE

FACULTY OF ECONOMICS

FARO

2012

JOÃO ROMÃO

FACULTY OF ECONOMICS

Supervisors:

Paulo M. M. Rodrigues

João Pinto Guerreiro

August 2012

TOURISM AND TERRITORIAL DIFFERENTIATION:

AN ANALYSIS OF THE COMPETITIVENESS

AND SUSTAINABILITY OF TOURISM

GENERAL INDEX:

INDEX OF FIGURES AND TABLES:

Tables and figures (diagrams and maps) produced by the author.

INDEX OF ABBREVIATIONS:

CRM	Customer Relationship Management
DMO	Destination Management Organizations
EC	European Commission
EU	European Union
GDP	Gross Domestic Product
NUTS	Nomenclature of territorial units for statistics
R&D	Research and Development
TALC	Tourism Area Life Cycle
UNESCO	United Nations Educational Scientific and Cultural Organization
UNWTO	United Nations World Tourism Organization
VIF	Variance Inflation Factor

ACKNOWLEDGMENTS

Algarve, Portugal (2005 to 2007)

The project to study the relation between tourism development and regional cultural and natural assets began to be developed in 2005, two years before the starting of the PhD program in Tourism organized by the University of Algarve. At that time I was living in Algarve, working as an independent consultant and media producer and the idea to start a research project in tourism was discussed with Professor João Guerreiro, who has a large experience on regional and tourism development, and who would later become one of the supervisors of this study. The creation of a PhD program in Tourism in 2007 at the University of Algarve would create the conditions for the development of this work.

Lisbon, Portugal (2008 to June 2009)

For professional reasons, I moved to Lisbon at the beginning of 2008, due to a relevant increase of my work as consultant in the company Augusto Mateus & Associados, where I was a regular collaborator since 2005. I had met Professor Augusto Mateus in 1990 when he was my teacher at Instituto Superior de Economia e Gestão (High Institute of Economics and Administration), during my graduation in Economics, and we had regular contacts since then. We had the opportunity to discuss this research project since the definition of its initial proposal and all the work developed until now.

The research proposal was presented to the Scientific Committee of the Faculty of Economics of the University in the end of 2008, after the first year of intense work in this PhD program, with extremely interesting workshops promoted by a high quality team of national and international Professors and Researchers. Since my research project included an econometric approach to tourism competitiveness and sustainability, after speaking to Professor Paulo M. M. Rodrigues, who has a large experience in Econometric methods, he accepted to co-supervise this work. His contribution has been decisive to the successful application of the quantitative methods in this study.

Istanbul, Turkey (July to December 2009)

For personal reasons, I moved do Istanbul in the second half of 2009. The research project presented at the University of Algarve was approved in July 2009 and the review of the relevant literature on competitiveness and sustainability of tourism and on panel data models started immediately after that. In Istanbul I had the opportunity to attend an extremely interesting International Conference on Cultural Tourism. I had the opportunity to meet Professor Maria Alvarez (Bogazici University), Professor Sukru Yarkan (University of Istanbul), with whom I discussed this work several times, and Professor Jafar Jafari (University of Wisconsin), one of the guest speakers of that Conference, with whom I had very regular contacts and discussions about this study until its conclusion.

New Haven, USA (January to June 2010)

In January 2010, I started a one-term period of research at Yale University, as a Visiting Student, supervised by Professor Robert Mendelshon, who has a large experience on Environmental Economics and several publications on Tourism and natural resources, who regularly discussed with me the developments of this work.

During my research at the Yale School of Forestry and Environment, I had also the opportunity to follow an Econometrics course lectured by Professor Timothy Gregoire, which represented an excellent contribution to improve my knowledge on quantitative methods. With the collaboration of Professor Gregoire and my supervisor Paulo M. M. Rodrigues (at distance), the statistical analysis presented in this work has been completely developed during my visit at Yale. I had also the opportunity to learn and use R software, which I had never used before.

Amsterdam, The Netherlands (September 2010 to June 2012)

In September 2010, I moved to Amsterdam, becoming a Visiting Researcher at the Spatial Economics Department of the Faculty of Economics of the Free University, supervised by Professor Peter Nijkamp, one of the most important European

researchers on regional and urban economics, with many relevant publications in tourism issues. With his contribution and the participation (at distance) of my supervisors João Guerreiro (mostly on tourism issues) and Paulo M. M. Rodrigues (mostly on econometric issues), this thesis and some related papers were written.

At the Free University, I also had the opportunity to learn and use the software Arc Gis (with some important support from Jasper Dekkers), which allowed me to create geographical representations of the statistical information used and produced in this work. I also had the opportunity to write two new articles, on tourism in Amsterdam, in collaboration with Professor Peter Nijkamp, Eveline van Leuween and Bart Neuts, using new statistical methods (Simultaneous Equation Models) and software tools (AMOS).

Finally, I would like to mention the contribution of Professor Richard Butler to discuss the application of the Tourism Area Life Cycle model in this work.

I am extremely grateful to all the persons above mentioned for their support and contributions to the development of this work, with their comments, suggestions and critics. I am also very grateful for their support and contribution, for my enjoyable stay in different parts of the world, always with a very inspiring academic environment. Nevertheless, all the mistakes or problems related to this work are exclusively my responsibility.

This work has been supported by FCT (Fundação para a Ciência e Tecnologia)

ABSTRACT:

The main objective of this work is to identify whether the regions where elements of attractiveness related to heritage and natural conditions are successfully incorporated in the tourism supply through innovative products and services that contribute to their differentiation 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 to the usage of natural and cultural assets in tourism supply are combined with other factors generally related to tourism activities, in order to explain the attractiveness of tourism destinations in southwest Europe, considering 67 regions from Italy, France, Spain and Portugal. In order to distinguish different conditions for regional tourism development, the model includes two dummy variables, related to the geographical position of each region and to the position of each region in the life cycle of tourism development.

This work includes a literature review on the main economic aspects and concepts related to tourism activities, regional tourism systems, regional innovation systems, differentiation of tourism destinations based on cultural and natural resources, competitiveness and sustainability of tourism.

The large quantity of data related to the evolution of tourism in the period between 2003 and 2008 allows the characterization and discussion of the processes of tourism development in the regions taken into consideration.

The most important conclusion arising from this study is that the factors of competitiveness related to the differentiation (innovation) and sustainability (natural and cultural resources) of tourism destinations taken in consideration have a clear positive impact on their competitiveness.

A positive statistical relation between the efforts on innovation and the regional tourism 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, showing that the conditions for innovation in tourism activities play an important role on the attractiveness of tourism destinations of southwest Europe: local specific natural and cultural resources are used as core elements of tourism attractiveness, contributing to the differentiation of tourism destinations.

As a general tendency, south-western European regions are integrating these specific characteristics of their territories in order to differentiate their tourism products, contributing to the achievement of "status" areas and for a competition based rather on differentiation than on cost leadership. Similarly, it is possible to conclude that these regions tend to compete on the basis of monopolistic competition.

KEYWORDS

Competitiveness, Sustainability, Innovation, Differentiation, Life-Cycle, Panel-Data

1. INTRODUCTION

The hypothesis to be discussed in this work is whether the regions where elements of attractiveness related to heritage and natural conditions are successfully incorporated in the tourism supply through innovative products and services that contribute to their differentiation are able to sustain their levels of attractiveness.

Tourism destinations' competitiveness has been investigated over the last two decades and, in recent approaches, the concept of sustainability appears linked to competitiveness (both in academic research and in institutional international guidelines). The sustainability of tourism development should be based on the local differentiation of the tourism supply, through the integration of specific cultural and natural characteristics of each destination, as is assumed by the recent political orientations at international level for the tourism sector (European Commission, 2009, 2007c; UNESCO, 2008, 2005; UNWTO, 2006; World Economic Forum, 2008; World Travel and Tourism Council, 2007, 2006).

In this thesis, a regional tourism demand function is developed, based on a panel data model, where determinants related to innovation and to the usage of natural and cultural assets in tourism supply are combined with other factors generally related to tourism activities, in order to explain the attractiveness of tourism destinations in southwest Europe (measured by the number of nights spent in hotel accommodation in each region), considering 67 regions (NUTS 2, according to the Eurostat classification) from Italy, France, Spain and Portugal.

According to Eurostat data for 2008, these countries were responsible for almost 50% of the nights spent in hotels and similar establishments in the European Union (EU) and their positions in the Travel and Tourism Competitiveness Index - Spain was 5th, France was 10th, Portugal was 15th and Italy was 28th - were clearly above their ranks in the Global Competitiveness Index - France was 16th, Spain was 29th, Portugal was 43th and Italy was 49th (World Economic Forum, 2008). These figures clearly expose the importance of these destinations for tourism in Europe and the importance of tourism for these countries.

The explanatory factors of competiveness taken into consideration include variables related to innovation (measuring the regional efforts in innovative activities), the qualifications of workers at regional level and the regional specific resources related to natural and cultural heritage that may be used to develop products and services that contribute to the differentiation of tourism destinations. These local and specific assets are also critical elements for the sustainability of tourism development.

Other "traditional" variables, such as those related to economic conditions (regional investment in hotels and restaurants or the evolution in internal and international markets), infrastructures (regional accommodation and international transport) or the evolution of tourism demand in rival destinations, are considered in this analysis of competitiveness

In order to distinguish different conditions for regional tourism development, the model also includes two dummy variables related to the geography and history: the geographical position of each region (west coast, south coast or inland) and to the position of each region in the life cycle of tourism development (exploration, development or stagnation).

This thesis starts with the definition of its conceptual framework, with a critical literature review, in order to identify and discuss the concepts that are used in this analysis (chapter 2), taking into consideration previous academic works, theoretical developments and international political guidelines in this field. Tourism destination, regional tourism system, regional innovation system, innovation, differentiation, competitiveness, sustainability and life-cycle are the core concepts in this work.

The economic aspects of contemporary tourism, the evolution of the definitions related to the studies in this field and the systematic character of tourism activities have a previous and introductory exposition and discussion (chapter 2.1.1). As the region is the basic unit for this study, an analysis of the complexity of the regional tourism systems is developed, considering that the "tourism destination" is in the centre of this analysis and that, even if the perception of tourists is generally related to the overall destination, tourism products and services are provided by a large set of companies, which implies a process of competition and cooperation in order to provide a differentiated experience. In fact, tourism destinations are multi-product areas trying to reach different markets (chapter 2.1.2).

Consequently, the analysis of innovation in tourism also implies a regional approach, taking into consideration market dynamics, science and technology system and their interactions at the regional level. This territorial unit is important for administrative and political purposes, for the creation of regional networks, for the concept of touristic experience as a result of a large set of products and services locally provided and the availability of relevant statistical data (chapter 2.2.1). In this sense, innovation based on local natural and cultural resources is a crucial element for the differentiation of destinations (chapter 2.2.2).

A discussion on the idea of competitiveness, its application to tourism destinations, the evolution of this concept in academic works and the multiple ways it can be measured is presented and discussed (chapter 2.3.1). Recent theoretical and political approaches suggest the importance of linking competitiveness to sustainability, considering the limits for the usage of local resources, their carrying capacity or the need to protect and benefit local populations from the processes of tourism development (chapter 2.3.2).

The Tourism Area Life Cycle will be presented and discussed, taking into consideration its extreme importance for tourism studies over the last three decades, but also the limits and difficulties of its application (chapter 2.4.1). An application of the generic principles of this model to the regions under analysis in this work will be developed (chapter 2.4.2), in order to create a dummy variable to be integrated in the panel data model.

The panel data model developed in order to analyse the regional tourism performance will be exposed in chapter 3. This is the most relevant contribution of this work, taking into consideration the very few attempts to use panel-data models in order to define a regional tourism demand function and the innovative approach that is proposed, integrating some factors related to the sustainability of tourism destinations among the determinants of their competitiveness and defining a close linkage between competitiveness and sustainability of tourism.

This chapter starts with a brief theoretical approach to panel data models (chapter 3.1.1), followed by the presentation of the methodology, data and variables that were used (chapter 3.1.2). Then, the statistical tests that were computed and results obtained are presented (chapter 3.1.3). Finally, a more detailed discussion on the data collected for each of the variables will be given, highlighting the most important characteristics related to each of them, and some geographical representation of the information will also be provided (chapter 3.2).

Conclusions, political implications, discussions, limits and further developments arising from this work will be presented in chapter 4. The main results of the model, the general conclusions related to competitiveness and sustainability of tourism destinations and some political recommendations will be provided (chapter 4.1) and the work concludes with a discussion of the limits and possible developments of this analysis (chapter 4.2).

This work also includes an exhaustive list of bibliographical references and an appendix with all the data used in the panel data model.

2. CONCEPTUAL FRAMEWORK AND LITERATURE REVIEW

A previous and brief discussion on the economic aspects of tourism, the definition of some basic concepts about tourism and the clarification of its systematic character is the starting point of this chapter.

Tourism destinations are the main focus of this analysis of competitiveness and sustainability, which implies a previous discussion of the regional tourism systems, as a complex set of companies, institutions and interrelations that contribute to the supply of tourism products and services.

Although a NUTS 2 region (considered in the panel data model developed in this work) is not necessarily a tourism destination (generally it includes more than one destination), the existence of regional regulatory institutions at this level (not only for tourism management and promotion, but also for the management of natural and cultural resources, innovation or economic development policies) and the availability of relevant and comparable statistical data make this territorial level relevant for the purposes of this work.

On the other hand, as innovation based on local natural and cultural factors is assumed to be the core element to combine competitiveness and sustainability in the long run, an analysis of regional innovation systems is also developed. These innovative activities allow destinations to differentiate from others, implying the study of previous works on differentiation in tourism.

This literature review also includes an analysis and discussion of the concept of competitiveness, its limits and application to tourism destinations, which has clearly evolved in academic research and institutional approaches over the last decades. One of the most important developments stressed in this work is the clear link of this concept to the idea of sustainability, implying a specific discussion of this topic in tourism studies.

Finally, the theoretical approaches to the Tourism Area Life Cycle Model are also discussed, considering the extreme importance of this approach for tourism studies since 1980 and also as a result of the introduction of a dummy variable related to this Life Cycle in the panel data model that will be developed in this work.

2.1. TOURISM, ECONOMY AND REGIONS

This chapter includes a review of the main economic aspects and concepts related to tourism activities, oriented towards the purposes of this study: an analysis of the competitiveness and sustainability of tourism destinations, based on their differentiated characteristics and innovative processes.

In the first part, these concepts will be exposed and the growing importance of tourism in a contemporary economy will be stressed. In the second part, the analysis will be more focused on the tourism destinations, with a discussion of the main aspects related to the regional tourism systems.

2.1.1. ECONOMIC ASPECTS OF TOURISM

Tourism is an increasingly important economic activity with major impacts on regional economic development, employment and society. From 25 million in 1950, international tourist arrivals reached 935 million in 2010, according to UNWTO (2010). A previous report refers that international arrivals will reach 1.6 billion by 2020, and stresses the diversification and continuous growth registered in tourism in the last six decades, making this sector one of the largest and fastest growing in the world economy. As a result of this growth, tourism achieved a major importance in international trade: tourism exports represent 30% of the world's exports of commercial services and 6% of overall exports of goods and services; tourism is in the fourth position in the ranking of export categories, after fuels, chemicals and automotive products (UNWTO, 2009).

Comparing the different continents, the European Union is the first tourism destination in the world, with 380 million international tourist arrivals in 2007 (42% of the total number of international arrivals globally considered), according to the European Commission (2009). Information from Eurostat also reveals that the 27 countries integrating the European Union registered 1.578 million nights spent in hotels and similar establishments in 2007. The group of countries being analysed in this study is extremely important for tourism in Europe and it was responsible for 48,8% of this number: Spain (272 million), Italy (254 million), France (204 million), and Portugal (40 million).

The strong growth of tourism since the middle of the XX 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), to a reduction of work time, to 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, economic crisis, fuel crisis (or fluctuation in the fuel prices), insecurity (at local or global levels), pandemics or natural catastrophes (like earthquakes or tsunamis) can have a strong negative impact in the development of tourism activities (Andraz, Gouveia and Rodrigues, 2009).

Despite the long process of continuous growth over the last six decades, tourism demand is still very sensitive to changes in revenues, as it is clearly exposed by the effects of the recent global economic crisis. As it is mentioned by UNWTO (2009a), after four years of consecutive and strong growth, tourism demand registered an abrupt fall in the middle of 2008, as a result of the financial crisis, the rising in commodity and oil price and relevant exchange rate fluctuations. The World Economic Forum (2009) confirms this idea in a document that stresses the reduction of leisure and business travels as a result of the international crisis and the close correlation between the business cycles and the tourism growth rates.

In fact, the fluctuations of the tourism activities can have very relevant impacts on the revenues, employment or the social conditions in the tourism destinations, taking into consideration that touristic and related services are mostly provided by small companies, less protected against long periods of recession.

As the European Commission (2006a) stresses, tourism is a "cross-cutting sector", related to many other economic activities, mobilizing a large and diverse set of services and professions, with relevant impacts on transport, construction, retail and all the specific product and service providers related to holidays, leisure and business travels. Despite the existence of large international companies (namely related to transports, international hotel chains or tour-operators), most of the tourism products and services are provided by small and medium enterprises: "in its most narrow definition, the European tourism industry creates more than 4% of the Community's GDP, with about 2 million enterprises employing about 4% of the total labour force (representing approximately 8 million jobs). When the links to other sectors are taken into account, the contribution of tourism to GDP is estimated to be around 11% and it provides employment to more than 12% of the labour force (24 million jobs)".

The definition of "tourism" has evolved over the last decades. Vanhove (2005) presents some of these definitions, starting from 1942 (Hunziker and Krapf): "a sum of relations and phenomena resulting from travel and stay of non-residents, in so far a stay does not lead to permanent residence and is not connected with any permanent or temporary earning activity". This definition stresses the importance

of “relations and phenomena”, suggesting the need for a systematic approach to the tourism sector, although it still excludes from tourism the activities related to business or congresses. In 1974, the British Tourism Society enlarges this concept, proposing that **“**Tourism is deemed to include any activity concerned with the temporary short-term movement of people to destinations outside the places where they normally live and work, and their activities during the stay at these destinations” and, in 1981, the Association Internationale d'Experts Scientifiques du Tourisme suggests “The entirety of interrelations and phenomena which result from people traveling and stopping at places which are neither their main continuous domiciles nor place of work either for leisure or in the context of business activities or study”. A more comprehensive approach has been recently adopted by UNWTO, defining tourists as” people who travel to and stay in places outside their usual environment for more than twenty-four (24) hours and not more than one consecutive year for leisure, business and other purposes not related to the exercise of an activity remunerated from within the place visited".

This definition clearly exposes the dynamic character of tourism (travelling to a destination that is different from the residence place of the tourist) and a static dimension (related to the experiences, services and products used by tourists while staying in a specific destination). At the same time, it simultaneously exposes the global (related to global markets and international travels) and the local character of tourism (related to the specific conditions of each particular destination).

2.1.2. REGIONAL TOURISM SYSTEMS AND TOURISM DESTINATIONS

Tourism services are provided by a large number and variety of companies: “tour operators” organize and sell tours to customers or travel agencies, which also benefit from their marketing and promotional materials; travel agencies sell travel packages from airline companies and tour-operators to customers, often supporting travellers to adapt available solutions to their particular preferences; these services are now mostly available on the internet, allowing tourists to collect relevant information, organize their travels, make reservations and pay for services using websites.

As tourists are becoming more autonomous to organize their travel using the internet, the promotion of destinations (mostly ensured by Destination Management Organizations), attractions and local services is becoming increasingly important and competitive, implying the development of efficient multimedia presentations to seduce consumers, which means that ICT technologies and design have increasingly relevance in the tourism sector.

Accommodation (in different kinds and categories, from hotels to camping or rural houses) and efficient mobility services (trains, buses, taxis, etc) play a decisive role in each touristic destination, although they are not, generally, the most important determinant of the attractiveness of a place. Restaurants are also necessary to a tourism destination and their importance depends on the importance of the local gastronomy on the attractiveness of each destination.

Commerce, bars and night-life are also important and necessary elements of a tourism destination, although its attractiveness generally does not rely on them.

On the other hand, many services that are not exclusively oriented for tourism play a determinant role in the attractiveness of a tourism destination. Tourism is no longer seen as a small group of services (like transport and accommodation) that support the visit to some particular territories but it is now faced as a complex system.

The different dimension, organizational skills and level of internationalization of these companies can imply a different ability to influence and dominate local markets, mostly in less developed countries, where there is a clear risk that tourism benefits do not spread to the local communities but remain in control of large international companies. It is the case, for example, of closed resort destinations, with small interaction with local products and services (Britton, 1982). Nevertheless, in the case of this work, it is assumed that the regions under analysis have similar entrepreneurial development and capability to benefit at local level from tourism development.

A comprehensive approach to the tourism system (Richie and Crouch, 2003) 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 concept of tourism "destination" and "experience" came to the centre of analysis: even if tourism services are provided by a large number of companies, tourists perceive destinations as an integrated experience: although the tourism experience is a result of multiple products, services and activities, each tourist creates his own image of a destination after the visit, as it is clearly stressed by Buhalis (2000): "Destinations are amalgams of tourism products, offering an integrated experience to consumers. (…) During their holiday, they "consume" destinations as a comprehensive experience, without often realising that each element of the product is produced and managed by individual players".

As a consequence, this author proposes the "Six As framework" for the analysis of tourism destinations: Attractions (natural, man-made, artificial, purpose built, heritage, special events); Accessibility (entire transportation system comprising of routes, terminals and vehicles); Amenities (accommodation and catering facilities, retailing, other tourist services); Available packages (pre-arranged packages by intermediaries and principals); Activities (all activities available at the destination and what consumers will do during their visit); Ancillary services (services used by tourists such as banks, telecommunications, post, newsagents, hospitals, etc.).

These concepts of "tourism destination" and "experience" have also been adopted by the United Nations World Tourism Organization (UNWTO, 2007): "To compete effectively, destinations have to deliver wonderful experiences and excellent value to visitors. The business of tourism is complex and fragmented

and from the time that visitors arrive in the destination, until they leave, the quality of their experience is affected by many services and experiences, including a range of public and private services, community interactions, environment and hospitality. Delivering excellent value will depend on many organisations working together in unity. (…) The Basic Elements of the Tourist Destination are: Attractions, Amenities, Accessibility, Image, Price and Human Resources". This link between the "value" of the experience at each destination and the quality of a large number of products and services that must be provided by independent agents, exposes the importance of the Destination Management Organizations.

According to these ideas, UNWTO (2007) defines a tourism destination as "a physical space in which a tourist spends at least one overnight. It includes tourism products such as support services and attractions and tourist resources within one day's return travel time. It has physical and administrative boundaries defining its management, and images and perceptions defining its market competitiveness". This document stresses the importance of Destination Management Organizations in the coordination of policies for touristic development, suggesting that their action should not be exclusively focused on marketing, but also in the leadership and coordination of tourism development at each destination (strategic leadership and management, in order to develop products and services that meet the expectations of tourists). In fact, as it is expressed in the most recent guidelines proposed by UNWTO (2011), developing and implementing adequate governance structures, where all the relevant stakeholders are represented, should be one of the main priorities for tourism development at regional level.

Consequently, the quality of the tourism experience depends on the satisfaction with a large set of products and services provided in each destination and can vary with the characteristics, expectations and motivations of each tourist (Scott et al., 2009). 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,

This idea also leads to the important relation between the concept of tourism destination and the characteristics of the territory, as is stressed by Kozak and Rimmington (1999) or by Formica and Kothari (2008), when they mention that "the tourism environment is growing in complexity and volatility" and that "tourism is place oriented", stressing that the overall experience does not rely only in the products and services consumed by tourists but also on the environment and community where the visit occurs.

Different factors may have an influence on destination choice. Not only the destinations have different and particular characteristics, but also each tourist may have different motivations and preferences for different destinations. Cracoli et al. (2007), clearly expose this connections between natural, cultural, artistic and environmental resources and the creation of an appealing product available in a specific area and resulting from an integrated set of products and services which generates a tourism experience that can satisfy the needs of specific tourists: "a

tourism destination thus produces a compound package of tourism services based on its indigenous supply potential". Similarly, Matias, Nijkamp and Neto (2007) consider that "tourist destinations are heterogeneous multi-product, multi-client business organisations".

Hassan (2000) suggests that the heterogeneity of contemporary tourist preferences is accomplished by the heterogeneity of tourism destinations, which creates conditions for the emergence of niche and specialized tourism segments, implying a global competition among destinations in order to attract specific persons or groups. On the other hand, tourists have now more information regarding their possibilities, which implies the creation and development of high quality tourism products and services.

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 more important, implying place audits, definition of visions and goals and strategic market plans that also take into consideration the past evolution of the touristic 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 costumers 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 differentiate experiences that can be offered based on local specific resources and addressed to the needs and motivations of particular consumers. This question reinforces the importance of the questions related to the processes and mechanisms of governance at regional level.

2.2. INNOVATION IN TOURISM AND DIFFERENTIATION OF DESTINATIONS

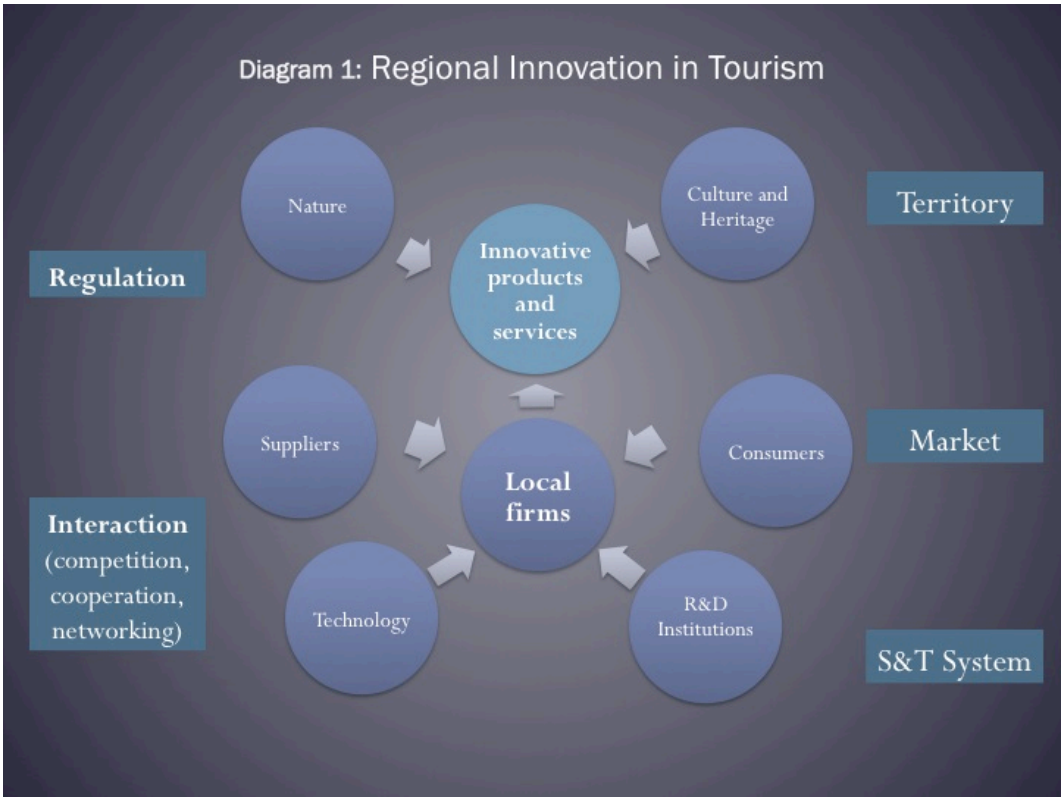
The main theoretical contributions to the processes of innovation in tourism and differentiation of tourism destinations will be discussed in this chapter, assuming that innovative tourism products and services based on the local characteristics of the territories are essential to the differentiation of destinations, potentially contributing to their competitiveness and sustainability.

In the first part of this chapter, the focus will be on the regional systems of innovation, taking into consideration that tourism can also be observed as a regional system, as exposed in the previous chapter. In the second part, the links between innovation, differentiation of destinations and local specific resources (namely those related to heritage and nature) will be exposed and discussed.

2.2.1. REGIONAL SYSTEMS OF INNOVATION AND TOURISM

The concept of tourism destination relies on the idea of a network of services cooperatively provided at the local level in order to satisfy the needs and expectations of tourists. Consequently, innovation in tourism results from all interactions between companies (large and small, with different purposes), among firms and costumers (taking benefits from the increasing interactivity) and 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). These relations are represented in figure 1.

Figure 1: Regional Innovation in Tourism



As tourism supply is becoming increasingly complex and incorporating more specific information about destinations, using technologically sophisticated means of communication, tourism is an increasingly knowledge based activity globally distributed, where innovations have a global diffusion (Millar and Choi, 2011).

These processes of innovation tend to spread faster when there is more interaction between local firms and R&D institutions. Nevertheless, 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, many innovations can easily spread from a tourism 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 definitely can contribute to the differentiation of a tourism destination. On the other hand, the necessarily 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).

This concept of tourism destination as a locally provided network of services is clearly stressed by Daskalopoulou et al. (2009): “The provision of the total tourism product necessitates the creation of networks between tourism firms within destinations. Networks enhance the co-operation of firms at a local scale providing them with flexibility, valuable marketing information, innovation and

resource development and access to knowledge, resources, markets or technologies".

This approach leads to the idea that innovation in tourism relies on networks for common learning, as is suggested by the European Commission (2006b), introducing the concept of "tourism learning area (TLA)" as a "multi-stakeholder, inter-sectoral, problem-solving approach aimed at improving SME performance and human potential in the tourism sector at the destination level. (…) When structured as the primary regional tourism-sector knowledge network, a TLA can address contemporary tourism-sector challenges by developing inter- and intra-organisational collaboration alongside a set of holistic learning opportunities".

The same document, which aims to promote a strategy for innovation at regional level in Europe, also emphasises the importance of distinguishing large companies (with better conditions for research and development) and small or micro companies (without the same possibilities to organize processes of learning and development of new products and services), which implies the creation of networks for innovation. This collaborative process among small and micro enterprises becomes even more important if we take into consideration that the European tourism industry involves more than 2 million SMEs and 7.7 million workers and that learning experiences can be formal, non-formal and informal. In order to implement this strategy, the European Commission (2006b) assumed that "by raising the profile and status of learning activities, a learning area develops a dynamic synergy between the individual, the company and the territory".

The concept of "learning-area" as a network is reinforced by the idea that technological developments in information and communication have a relevant impact on innovation, as Davie and Foray (2003) remember, stressing the importance of cooperation among the members of local communities in order to co-produce knowledge-based activities supported by information and communication technologies. According to this author, this process must involve a relevant number of members from community (diffuse sources of innovation), the creation of a "public" space circulation of ideas and knowledge and new information and communication technologies in order to codify and transmit this new knowledge.

The importance of local and regional communities is also mentioned by Asheim et al. (2006), stressing the effects of local specialization on the transport costs, stimulating agglomeration and creating conditions to benefit from local external economies, which can lead to an improvement in endogenous innovation and productivity. This leads to the conclusion that localization is increasingly important in economic structures, despite the processes of globalization and technological change: "Innovation is an intrinsically territorial, localized phenomenon, which is highly dependent on resources which are location specific, linked to specific places and impossible to reproduce elsewhere, so that the regional and local levels are also important sites for innovation". This idea has important consequences on innovation in tourism, considering the importance of local characteristics for tourism development.

Nevertheless, it is important to remember that the processes of regional innovation do not rely only on the technological conditions of each place: there is a complex set of conditions that influence innovation and regional development, including differences in educational and cultural development, access to markets, investment and institutional co-operation.

It must be also taken into consideration that regional innovation systems include different and interacting subsystems with connections to local, national or global elements and institutions (Cooke, 2004b). Consequently, even when some regions have similar technological profiles, the success in innovative activities can vary as a result of differences among other conditions that influence this process (Pinto et al., 2010): innovation is an evolutionary and path-dependence process, where "history matters", as Navickas and Malakauskaite (2010) stress. Consequently, the definition of adequate strategies and policies for innovation or the involvement and cooperation among stakeholders are decisive elements for the success of regional processes of innovation.

The concept of innovation as an evolutionary process is also linked to the idea that institutions are, themselves, subject to evolution: they are influenced by economic conditions and interact with other institutions and clusters, adapting their behaviour according to these interactions, competition and technological change (Steiner, 2006) remembers.

On the other hand, innovation is a permanent process of "recombination", resulting from two apparently contradictory aspects: continuity from existing elements and radical change resulting from a new combination (Lundvall, 2002b). On the other hand, connectivity between institutions, resulting from transports, information and communication technologies or network linkages, is a major force driving local and regional innovation processes (Simmie, 2006).

The comprehensive approach to the local and regional networking processes of innovation applied to tourism products, services and activities proposed by Hjalager (2010) covers a large set of questions related to productivity, innovation, and creation of new businesses, which result from the formation of clusters and clearly contribute to regional competitiveness. This author establishes important distinctions between embedded knowledge ("knowledge and technology are transferred from head offices to affiliated units together with, and embedded in, capital and managerial capacities and systems"), competence and resource-based knowledge ("in order to influence innovation processes, [tacit] knowledge has to be captured, made explicit and properly understood, interpreted, restored, adapted into specific innovations and recoded"), localised knowledge ("the destination as such is a repository of competence and knowledge, and parts of this knowledge are unique and inimitable") and research based knowledge ("Academic research and research based education are generally considered indispensable for the occurrence of inventions and innovations and for their subsequent commercial exploitation").

Other important remark proposed by Hjalager (2010) is the distinction between product or service innovations, process innovations, managerial innovations related to internal aspects of organizations), management innovations (related to coordination and cooperation of different organizations) and institutional innovations related with structural aspects, like the legal framework).

These characteristics also show the systematic character of innovation in tourism: a tourism destination includes a large group of products and services, provided by different enterprises and public institutions, most of the times related not only to tourists but also to local communities. This characteristic of tourism implies a bigger effort to coordinate networks with different kind of institutions and different purposes: a strong regional coordination and cooperation among stakeholders is a particular aspect to facilitate the processes of innovation, namely those that can contribute to the reinforcement of the uniqueness of each destination (Hall and Williams, 2008). Consequently, for these authors, tacit knowledge is particularly important for innovation, considering that it is necessary to codify explicit knowledge, the difficulties to be imitate and the larger impacts on competitiveness. On the other hand, they clearly specify the uniqueness of innovation in services, which obviously applies to tourism activities: co-terminality of production and consumption, temporality (production and consumption occur at the same time) and spatiality (consumption must occur in the place where services are produced) imply that costumers act as "co-creators", or even as "partial employees" in the innovation process.

Hall and Williams (2008) also emphasize the systemic character of tourism activities and, consequently, they propose a systemic approach for innovation in tourism, stressing that the sources for these processes of innovation often rely outside the sector: "Innovation pervades all corners of the tourism system, whether it is the small hotel that creates its first website, the restaurant that introduces new dishes to appeal to an emerging tourism market or the individual tourist who creates new ways of holidaying for himself or herself. (…) Not only is innovation pervasive in tourism but there is also a need to understand this in terms of how tourism is situated in relation to broader economic, social and political changes. (…) The source of tourism innovation often lies outside the sector itself".

The extraordinary evolution of information and communication technologies over the last three decades had deep 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 taking decisions about travelling to distant places that customers, most of the times, do not know. Finally, travelling decisions are mostly taken long time before the travel occurs, which implies the necessary reservations of transports, accommodation and other services to be made long time before the services are used.

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 to 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 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 reduce significantly the role of the informative websites managed by Destination Management Organizations (Parra-Lopez et al., 2011). Other studies have focused the attention on the descriptions of travels in personal blogs (Lyn, 2006) or photography websites (Lo, 2011), showing the diversity of independently and complex information available for the tourists when they choose a destination.

Consequently, it is possible to say that the developments in information and communication technologies created a new paradigm in tourism industry, contributing to a generalized reorganization of process 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 improve quality and satisfaction.

On the other hand, it became easier for the tourism companies to understand the needs and motivations of tourists all over the world and to reach specific targets with personalized, comprehensive and up-to-date information about products and services specially oriented for those targets. “Gradually new, experienced, sophisticated, and demanding travellers require interacting with suppliers to satisfy their own specific needs and wishes. (…) A well-informed consumer is

able to interact better with local resources and cultures, to find products and services that meet his/her requirements and to take advantage of special offers and reduced prices" (Buhalis and Law, 2008).

According to these authors, some characteristics of the Information and Communication Technologies are particularly relevant for tourism activities: interoperability ("provision of a well-defined and end-to-end service which is in a consistent and predictable way" and "a realistic alternative to standardization"), multimedia ("extensive representation of photos and graphics in order to provide a tangible image or experience to travel planners"), wireless technologies ("cellular phones and pagers; global positioning system; cordless computer peripherals and telephones; home-remote control and monitor systems; GSM Communication and the Wireless Application Protocol; General Packet Radio Service and Universal Mobile Telecommunications System") and Web design ("in both functionality and usability senses"). These developments lead to an "increase in buyers' bargaining power also related to the increased convenience, transparency, flexibility, direct communication with suppliers, and depth of the available information. The Internet also enabled them to dynamically package their individualised products by combining different travel products.

Remembering the importance of small tourism enterprises in most destinations, Karanasios and Burgess (2008) point out some important advantages that these companies can benefit from the development of information and communication technologies, despite the high level of investments traditionally required for

innovative activities: reduced cost of advertising; more effective and cheaper communication; exposure to a global market; more efficient access to information; possibility of attracting multinational organisations.

These possibilities 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, contribute 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.

2.2.2. INNOVATION, DIFFERENTIATION AND TERRITORY

As it was previously discussed, innovation based on local specific resources is essential for the differentiation of tourism destinations. Nevertheless, it is also necessary to take into consideration that local specific resources related to natural or cultural aspects of the territory are generally very sensitive to the excess of usage, implying some measures that ensure an adequate number of visitors, considering the "carrying capacity" of each site and the costs for its preservation: a level of utilization that ensures economic benefits in the short and long run, allowing the destination to keep the original characteristics that makes it attractive.

This question can be seen in a broader perspective, considering the relationship between natural resources and international trade and the pressure to avoid costs related to the protection of the environment, with very negative consequences in the long-run, which implies a large effort of coordination and cooperation. The joint use of environmental resources by individual agents taking independent decisions is frequently linked to the absence or an insufficient level of cooperation (Huybers and Bennett, 2002).

According to these authors, there are three main reasons for a non-cooperative outcome: the tragedy of the commons, resulting in over-exploitation of resources and their deterioration, once there is no rational incentive for cooperation in the use of a common resource; the game theoretic notion of the "prisoner's dilemma",

where the general strategy assumed by each agent is not to cooperate even though the outcome would be better with cooperation; the situations in which individual's efforts are interdependent but some individuals pursue their own interests, resulting in collective failure.

The idea of uniqueness and the need to develop an adequate positioning of the touristic destinations is also developed in marketing studies, as is suggested by Kotler et al (1995) when they define the “five stages of "place marketing": Place audit (community's strengths and weaknesses, opportunities and threats); Visions and goals (residents); Strategy formulation (for resident's goals); Action Plan (for the strategy); Implementation and control.

These authors also propose that tourism destinations should develop marketing strategies in a similar way that is used by companies, considering that “places compete for resources like business; dynamic, global forces affect their industries; places compete for tourists, conventions, educated residents, factories, corporate headquarters and start-up firms; they must be excellent or superior in some special ways; they must be market-conscious and market-driven; the attributes they develop today will affect their market position tomorrow”.

In fact, the “place brand” involves dynamic relationships and significant efforts on coordination (Hankinson 2004) in order to identify and promote differentiated experiences that can be offered based on local specific resources and addressed to the needs and motivations of particular consumers.

In order to promote cooperative behaviours between firms and coordination in the exploitation of local natural or cultural resources, the activity of the Destination Management Organizations and the institutions that, at local level, have the responsibility for the preservation and management of these sensitive assets becomes crucial. On the other hand, natural and cultural assets contribute to the well-being of local communities with non-market value (Choong, 1997).

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. The development of tourism products based on natural characteristics of the territory must take into account the pressure on their degradation, the need to impose limits to their usage and the possibility of residents to use and take benefit of their local resources.

On the other hand, the commodification of local cultural elements in a tourism destination can transform these values over time, changing their meaning, in a process of adaptation to the preferences of visitors or through the elimination of cultural activities that are not demanded by tourists. In this sense, a high level of involvement of local stakeholders is required, in order to avoid a path "from euphoria to antagonism" (Doxey, 1976) or "from euphoria to xenophobia" (Wall and Mathieson, 2006) in the way that local communities perceive the presence of tourists.

The definition of international standards for the touristic utilization of cultural and natural sites, like the registration of a place as World Heritage site classified by UNESCO, can promote a better protection and a more sustainable use of resources, but can also have relevant negative impacts, resulting from excess usage (UNESCO, 2005) and require a process of planning involving tourism companies and regulatory institutions.

In fact, as stressed by the Director of the UNESCO World Heritage Center (Bandarin, 2005), the "inscription to the World Heritage List not only confers recognition in terms of conservation, but also raises a site's profile and stimulates touristic demand. Tourism is, however, a double-edged sword, which confers economic benefits but places stress on the fabric of destinations and the communities who live in them. (…) Tourism is now widely regarded as one of the largest industrial sectors alongside financial services and manufacturing, and careful attention needs be paid to the global repercussions of this many-sided phenomenon".

Another important question concerning cultural heritage is related to the authenticity and commodification of cultural resources and their use for touristic purposes: although it can have an important contribution to preserve traditional activities, heritage is 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 tourism experiences of visitors but also connected with the

values of local communities. Consequently, it is highly desirable that local stakeholders can 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, as Porter (1985) suggests, which would have smaller impacts on the local economies and larger impacts on natural and cultural resources.

In a different perspective, but with similar conclusions, it can also be assumed that this strategy helps destinations to become a status area, instead of a commodity area, in the sense defined by Gilbert (1990). Nevertheless, this strategy also requires an attitude of permanent innovation and flexible specialization, as proposed by Poon (1993), which implies multiple interactions between firms, suppliers, consumers and public institutions and requires a strong regional innovation system (Buhalis, 2000).

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 tourism development over time and also for local social cohesion. In fact, an adequate process of differentiation

based on the natural and cultural conditions of each territory implies a big effort of institutional coordination and involvement of local communities, in order to ensure the preservation of the uniqueness of each place, the integrity of natural and cultural values and an the necessary conditions to benefit local communities from the processes of tourism development.

2.3. COMPETITIVENESS AND SUSTAINABILITY IN TOURISM

As is commonly assumed in contemporary academic studies and international political guidelines for tourism development, competitiveness and sustainability of tourism destinations should be analysed together, in order to guarantee that the attractiveness of a destination can be sustained in the long run, preserving the natural and cultural characteristics of the territories and contributing to the social cohesion of local communities.

In the first part of this chapter, an analysis of the application of the concept of competitiveness to tourism destinations is developed and discussed. In the second part, the concept of sustainability will be integrated in the theoretical approaches to competitiveness in tourism.

2.3.1. COMPETITIVENESS IN TOURISM STUDIES

The studies on competitiveness started with the first theoretical approaches to economic systems, with the works of Adam Smith and David Ricardo (and the concept of comparative advantage, which tries to explain what each country should produce or import). Today, competitiveness is a core concept in tourism studies and cannot be explained without an adequate linkage to the idea of sustainability (Ritchie and Crouch, 2003). These authors present a list of definitions for "competitiveness" and develop the approach proposed by Porter (1985, 2003) to competitiveness, emphasising the importance of the formation of clusters at the regional level (creating better conditions for innovation), the interactions with suppliers and costumers, the rivalry and the market structures or the domestic demand.

Nevertheless, in the particular case of tourism, it is important to note that "destinations" are the core element of the competition (instead of nations or companies) and to consider the "experience" as the fundamental product in tourism, which implies that competition is focused on the destination: "Although competition occurs between airlines, tour operators, hotels, and other tourism services, this inter-enterprise competition is dependent upon and derived from the choices tourists make between alternative destinations. Nations, states, cities, and regional areas now take their role as tourist destinations very seriously, committing considerable effort and funds towards enhancing their touristic image and attractiveness" (Ritchie and Crouch, 2000).

Consequently, and taking into consideration the contemporary transformations in the tourism industry and its globally competitive environment, the competitiveness of tourism destinations implies an adequate development of the whole industry and an important institutional support to make tourism a leading economic sector (Poon, 1994). Tourism destinations require the definition of competitive strategies and takes into consideration the extremely fast changes in the tourism industry in the last decades in order to stress that comparative advantages of destinations can not be exclusively related to natural resources, suggesting that the development of tourism depends on the evolution of the entire service sector. Poon recommends "four key principles for competitive destinations: put the environment first; make tourism a lead sector; strengthen the distributions channels in the marketplace; build a dynamic private sector".

In order to define strategic options, Buhalis (2000) shares the idea that a destination is at the core of tourism competitiveness, considering that "a destination is competitive if it can attract and satisfy potential tourists, and this competitiveness is determined both by tourism-specific factors and a much wider range of factors that influence the tourism service providers". This author applies the three main generic strategies proposed by Porter (overall cost leadership, with mass production oriented to minimize costs; differentiation of products or services, creating something perceived as being unique; focus strategy, trying to reach specific market segments and benefiting from cost leadership or product differentiation) to tourism destinations.

In his analysis, Buhalis takes the conceptualizations developed by Gilbert or Poon in order to define strategic frameworks. According to Gilbert (1990), destinations can be classified between a "status area" (related to unique attributes perceived by the markets) and a "commodity area" (substitutable destinations, very sensitive to variations in prices or economic fluctuations). Consequently, destinations should define strategies in order to attempt to differentiate their products and services to become "status areas" and take benefit from higher loyalty from visitor and economic benefits. On the other hand, the concept of "flexible specialization", as a strategy of permanent innovation, proposed by Poon (1993), is suggested by Buhalis as an essential aspect of tourism destination development. In fact, this author concludes that the concepts of "differentiation" proposed by Porter, "status area" defined by Gilbert and "flexible specialization" suggested by Poon are the key strategic elements for tourism development in each destination. On the contrary, massive tourism based on price competition leads to degradation of resources and loss of attractiveness in the long run. This approach leads to the idea, assumed in this work, that competitiveness and sustainability in tourism requires an integrated approach.

Common output indicators for the competitiveness in tourism are the number of arrivals to destinations, the number of tourists who repeat the visit, the number of nights in local accommodation services, market shares, productivity or the revenues generated by tourism activities.

From the input side, regarding the factors influencing competitiveness, there is a wide range of possibilities considered in the literature. Kozak (1999) points out some distinctions between the concepts of competitiveness applied to organizations or tourism destinations, considering that the competitive performance of organizations is usually measured, from the input side, taking in consideration physical and human capital endowment and research and development expenses (while the output measures are normally related with profitability, market share, productivity or growth). Regarding destination competitiveness, the input side could be measured considering physical sources (tourist facilities, infrastructure and environment), human capital endowment (services), and marketing and promotion expenses (while the output should be related to market share or productivity). Following this idea, Kozak suggests a large group of factors affecting destination competitiveness (Socio-economic Profile of Tourism Demand and Changes in Markets; Access to Tourist Markets; Mature Tourist Destinations and Consumer Psychology; Influences of Tourist Satisfaction; Marketing by Tour Operators and their Perceptions of Destinations; Prices and Costs; Exchange rates; Use of Information Technologies; Safety, Security and Risk; Product Differentiation; Adequacy and Quality of Tourist Facilities and Services; Quality of Environmental Resources; Government Policies and Entry barriers) and provides a very exhaustive list of indicators of destination competitiveness.

Dwyer and Kim (2003) propose a large set of indicators to measure competitiveness, divided into groups: endowed resources (nature; culture and

heritage); created resources (tourism infra-structure; range of activities; shopping; entertainment; special events / festivals); supporting factors (general infra-structure; quality of service; accessibility; hospitality; market ties); destination management (organization; marketing; policy, planning and development; human resource; environment); situational conditions (competitive micro-environment; location; global macro-environment; price; safety); demand factors; market performance indicators (number of visitors; expenditures; contribution for local economy; economic prosperity; investment; price competitiveness index; government support).

Other proposals to measure competitiveness were developed by Navickas and Malakauskaite (2009), Tsai (2009) or Mazanek (2007) with different sets of indicators. Hong (2008) also presents a very exhaustive list of indicators, considering Domestic and Global Environment Conditions and distinguishing Exogenous Comparative Advantages, Endogenous Comparative Advantages, Competitive Advantages and Tourism Management. Vanhove (2005) considers factors related to macro-economic conditions, supply, transport, demand and policy. The World Economic Forum developed the Travel and Tourism Competitiveness Index, with a large set of indicators organized in three dimensions (Regulatory framework; Business environment and infrastructure; Human, Cultural and Natural Resources).

Nevertheless, it is also commonly accepted that the factors and indicators for the competitiveness of tourism destinations are not universal: destinations

competitiveness must be measured in relative terms, comparing with relevant rivals and considering specific factors that are not generalized: in this sense, a destination is not competitive in abstract terms but against relevant competing destinations, which that, in order to evaluate competitiveness, it is necessary to understand which are the competitive destinations (Enright and Newton, 2004)

On the other hand, the satisfaction of tourists and potential tourists does not only rely on the competitiveness of tourism services providers, but in a large group of institutions, practices, regulations and policies that influence this satisfaction: "a destination is competitive if it can attract and satisfy potential tourists, and this competitiveness is determined both by tourism-specific factors and a much wider range of factors that influence the tourism service providers". Consequently, management and tourism development policies cannot be defined in abstract and in generalized ways, but must be adequate to the specific conditions of each destination: universal policy and managerial recommendations can lead to relevant and unwanted negative consequences (Enright and Newton, 2005).

Finally, it should that the application of the principles of "competitiveness" to the regional dimension, becoming hegemonic in the economic literature in the 1990's, mostly after the contributions from Porter (1985) can also be object of criticism. Hall (2007) stresses the lack of discussion about this hegemony, considering that there is a clear meaning for the firm competitiveness but the same does not happen when regional competitiveness is discussed. In the same sense, Bristow (2005, 2010) questions the theoretical foundations of the analysis focused on

regional competitiveness, considering that is not clear how this competition between regions occurs and what is the link between regional competitiveness, regional development and benefits for the communities.

The concept of regional competitiveness related to the model to be presented in this work tries to connect the idea of growth (in regional tourism demand) to the sustainable usage of local resources (natural and cultural assets potentially used as a basis for innovative tourism products and services), not taking into consideration the impacts on regional development, employment or social conditions.

2.3.2. TOURISM, TERRITORY AND SUSTAINABILITY

If we take time into consideration, and the importance of sustaining competitiveness in the long run, the concepts of sustainability, local community and sharing benefits must be involved.

The systematic approach proposed by Ritchie and Crouch (2003) to analyse the tourism system and the determinants of tourism destinations competitiveness seems to be generally accepted by researchers on tourism studies: "what makes a tourism destination truly competitive is its ability to increase tourism expenditure, to increasingly attract visitors while providing them with satisfying, memorable experiences, and to do so in a profitable way, while enhancing the well-being of destination residents and preserving the natural capital of the destinations for future generations".

This definition makes explicit reference to the idea of growth (increasing revenues and visitors), satisfaction of consumers (memorable experiences), positive consequences on the local communities (well-being of residents), preservation of local resources (preserving natural capital) and time (future generations), taking the general approach developed by Porter (the "diamond" formed by Factor conditions; Demand conditions; Related and supporting Industries; Firm Strategy, Structure and Rivalry) from the national to the regional level. In fact, authors like Krugman (1994) consider competitiveness a concept that should not be applied to national economies.

The relation between the globalization of tourism activities and the importance of local and regional factors that lead to competitiveness is clearly linked to the importance of local brands that allow for the differentiation of destinations and contribute to the achievement of competitive advantages (Daskalopoulou and Petrou 2009).

Other authors stress the idea that competitiveness and tourism development must be based on the local characteristics of the territory that create a unique tourism experience but have important impacts, sometimes irreversible, on areas and landscapes, revealing a contradiction between the technological and social evolution that leads to a significant increase in tourism activities, at global level, and the potential negative impacts of these activities at local and regional levels. As tourism development is essentially a local and territorial process, wrong actions can have irreversible negative effects on local resources and landscapes (Celant, A, 2007). As a conclusion, Celant identifies some key elements to define a strategy for tourism development (ability to combine information and promotion with organizational and management policies), taking into consideration the limits of the territory, which implies an active participation of local stakeholders in the decision processes.

The limits imposed by local resources to competitiveness and growth had been mentioned before (see for instance Buhalis, 1999), linking the general concept of limited resources to the forces that determine competitiveness proposed by Porter

in his analysis of competitiveness and stressing that, in some circumstances, the possibilities to create differentiated local tourism products have been destroyed by previous development of mass-tourism, leading to overexploitation of natural or cultural resources and landscapes, which is a particularly relevant problem in some areas that base their touristic supply on sun-and-sea tourism in the south of Europe.

The idea that competitiveness cannot be sustained without preserving the factors that define the uniqueness of each touristic destination is also pointed out by Hassan (2000), stressing the need to create tourism products and services that respond to market demands and consumer's needs, contributing to preserve the local characteristics and resources of the territory, which implies a commitment of the local communities and the involvement of local stakeholders in the definition of tourism development plans. In fact, tourism requires the contribution of a large and varied set of entities and enterprises, from different sectors, and short-term success can lead to important deterioration of resources in the long run.

Hassan proposes four determinants for sustainable market competitiveness: Comparative advantage (factors associated with both the macro and micro environments that are critical to market competitiveness); Demand orientation (ability to respond to the changing nature of market demand); Industry structure (existence or absence of an organized tourism-related industry structure); Environmental commitment (the destination's commitment to the environment will influence the potential for sustained market competitiveness).

This idea of competitiveness is clearly linked to the idea of sustainability, as the linkage between the global character of competition between destinations and the limits of local and regional resources leads to the idea of sustainability, as expressed by Ritchie and Crouch (2000): “Competitiveness is illusory without sustainability. Indeed, in our view the phrase, sustainable competitiveness, is tautological”.

This close connection between competitiveness and sustainability made these authors improve their model of destination competitiveness by explicitly including the idea of sustainability: “One fundamental modification that has been made is to more formally introduce the supporting concept of sustainability to the original competitiveness model. This modification has been introduced to emphasize the fact that, as discussed earlier, competitiveness is illusory without sustainability.

To be competitive, a destination's development for tourism must be sustainable not just economically, and not just ecologically, but socially, culturally and politically as well” (Ritchie and Crouch, 2003). This different approach by the same authors suggests a set of global forces determining competitiveness, with an “onion-skin” structure defined with three interdependent layers: the outer layer, more stable, including climate, environment and geography; the intermediate layer, including demography and socio-cultural aspects; and the inner layer, more dynamic, related to economy, technology and politics.

The connection between competitiveness and sustainability had also been suggested by Jafari (2001), assuming that all the processes of tourism development, including those occurring in mass tourism destinations, must take into consideration the issues related to their sustainability, according to the principles of the "Knowledge-Base Platform".

The problems, complexity and possible methodologies to evaluate sustainability in tourism were deeply analyzed by Miller and Twining-Ward (2005) or Weaver (2006). Sharpley (2009) considers that tourism is in the interface between four global factors (technology, environment, economy and politics) and stresses that if competitiveness is based on over-exploitation of local resources, it will imply very important costs for the future of local communities. This idea can be linked to the concept of sustainable development, considering that the competitiveness of touristic destinations does not only imply economic benefits, but also a contribution to local social cohesion, political involvement of local communities and preservation of local natural and cultural values.

Nevertheless, this author addresses an extremely important warning: "Despite all the attention paid to sustainable tourism development in academic circles, despite the innumerable sets of sustainable tourism guidelines and policy documents, despite national and global accreditation schemes and despite the best efforts of pressure groups and others to encourage so-called responsible behaviour on the part of tourists, the sustainable tourism message appears to have little impact on

the overall growth and development of tourism". On the other hand, Hall (1998) considers that the idea of sustainability has been used in different contexts with different meanings and implications by a large variety of stakeholders in the last decades.

For these reasons, strategic documents attempting to promote the competitiveness in tourism are increasingly including concerns relating sustainability, as this recent example clearly shows, defining four pillars for tourism development in Europe: improving the competitiveness, promoting the continuous sustainable development of tourism, enhancing Europe's image as home to sustainable and high quality destinations and maximizing the potential of the EU policies and financial instruments for the development of European tourism (European Commission, 2010).

Similar orientations towards the sustainable development of tourism have been defined by the European Commission in different documents along the last decade (2007; 2006) and also by other entities, like the Secretariat of the Convention on Biological Diversity (2004), stating that tourism is, at the same time, an important and fast growing industry but also a source of pressure on fragile ecosystems, which implies a careful planning in order to guarantee that short term benefits do not imply important long term negative consequences, not only for the environment and biological diversity, but also to regional tourism attractiveness.

UNESCO, the organization responsible for the classification of World Heritage

Sites, also defines a clear concern with sustainability, since the signature of the Convention Concerning the Protection of the World Cultural and Natural Heritage (Paris, 1972), an international agreement through which nations recognize their duty to identify, protect, preserve and transmit to future generations the cultural and natural heritage situated on their territories.

Nevertheless, the reasons that lead a site to be chosen and classified as World Heritage also contribute to attract tourists to visit them, creating a large pressure on the site and requiring careful measures to protect it and to take into consideration its limits and carrying capacity.

The United Nations World Tourism Organization, the Specialized Agency of the United Nations for Tourism, also recommends a strict concern with the sustainable development of tourism and the potential contribution of tourism to sustainable development, encouraging all countries to implement policies for tourism development that respect the principles of sustainability (UNWTO, 2006).

A more recent document produced by this organization clearly defines a link between competitiveness and sustainability of tourism: “to compete effectively, destinations have to deliver wonderful experiences and excellent value to visitors. The business of tourism is complex and fragmented and from the time that visitors arrive in the destination, until they leave, the quality of their experience is affected by many services and experiences, including a range of public and private services, community interactions, environment and hospitality. Delivering

excellent value will depend on many organizations working together in unity. Destination management calls for a coalition of these different interests to work towards a common goal to ensure the viability and integrity of their destination now, and for the future" (UNWTO, 2007).

Even more recently, UNWTO promoted the "Algarve Consensus" (to be published), focused on tourism and regional development, climate change and governance, providing general guidelines in order improve the contribution of tourism to regional development, minimize the environmental problems related to climate change and promote appropriate processes of governance that guarantee the involvement of local stakeholders (UNWTO, 2011).

These examples clearly show that competitiveness in tourism must be clearly linked to the idea of sustainability, requiring an appropriate process of planning involving local stakeholders and including an adequate management of local resources, namely those related to natural and cultural assets. The approach to competitiveness developed in this work tries to integrate this conceptualization, defending that differentiation through innovation and based on natural and cultural local specificities is the key element to combine competitiveness and sustainability in the development of tourism destinations.

2.4. THE TOURISM AREA LIFE CYCLE MODEL

This chapter includes a presentation of the Tourism Area Life Cycle (TALC) model and its evolution since it was created, in 1980. This model has been widely used in academic research and it has also been a useful tool for planning tourism development. In the first part of this chapter, a literature review on the applications, developments, critics and limits of the model will be exposed.

In the second part, an application of the TALC model to the regions of Southwestern European countries will be developed. The results of this application will be included as a dummy variable in the panel data model presented in the next chapter, in order to analyze the competitiveness of tourism destinations in the same regions.

2.4.1. TALC MODEL: ORIGINS, DEVELOPMENTS, LIMITS AND REGIONS

The Tourism Area Life Cycle (TALC) model (Butler, 1980) defines a standard for the evolution of tourism destinations, with five stages (involvement, exploration, development, consolidation and stagnation) assuming that, until a certain moment, the growth of tourism in a region is characterized by a growing involvement of local communities and impacts on local economies.

After that point, overexploitation of tourism resources can create pressures on the local environment or the resident's quality of life, reducing the positive impacts on the local communities and the attractiveness of the place. Although this model defines a unique and linear standard of evolution (Chambers, 2007) at least in the first stages, it also emphasizes the dynamic and evolving character of tourism destinations, applying to tourism areas a similar approach to that of other product life cycles. In this sense, the model can be interpreted as an ideal of evolution (Weaver, 2006b), not considering internal and external forces influencing each specific destination (Agarwall, 1997; Rodriguez, 2008).

According to this model, the first stages of development of a tourism area ("Involvement" and "Exploration") are characterized by a slow growth rate of tourism activities, based on individual trips, without specific tourism oriented services and no relevant impacts on local daily life (although they become more relevant in the "Exploration" stage).

Following the categories of tourists proposed by Plog (1972), they can be classified as "Allocentric", preferring to experience "adventures" and taking some risks, instead of expecting high levels of organization and avoiding commodification of local resources. These tourists can also be classified as "Explorers" and "Non-Institutionalized", according to the categories proposed by Cohen (1972), considering that they decide to visit places that are not known or massively promoted and do not have organized travels.

The third stage in the Life Cycle model is "Development" and it results from the growing number of visitors that reached a destination in the previous stages. The growth rate of tourism services and activities increases, new services are provided (including organized travels), some influence on daily life starts to be noticed, international companies (namely those related to transports or accommodation) start to operate in the destination and some services and facilities are imported.

According to Cohen (1972) "individual mass tourism" is progressively replaced by "organized mass tourism", as the travels tend to be more "institutionalized". "Explorer" tourists tend to be replaced by "drifters", as the destination becomes more promoted and recognized. According to Plog (1972), "Psycocentric" visitors tend to replace the "Allocentric", suggesting that the destination is now visited by tourists that prefer "safe" places (in a sense they are very well known and organized) rather than unexploited areas. Nevertheless, it is important to notice that these different types of tourism and tourists can coexist in different stages of development of a tourism destination (Chambers, 2007).

The stage of “Development” leads to a period of “Consolidation” and then of “Stagnation”, with lower growth rates of tourism activities and the presence of more tourists than local people in the destinations, at least in some periods of the year (which is particularly relevant for destination which demand depends on seasonal climatic conditions, like sun-and-sea areas or winter sports places). As tourism products and services were developed, often implying important investments, larger efforts on promotion are required and marketing activities become increasingly important.

After this period, destinations can enter a stage of “Decline”, with less visitors and local attractions being replaced by imported facilities, which leads to a less differentiated product, or “Rejuvenation”, linked to innovative products, services and facilities that contribute to diversification and differentiation of the local tourism supply, based on the specific characteristics of each territory. This process requires the implementation of new strategies for tourism development, involving local stakeholders, as Brooker and Burgess (2008) point out. Kozak and Martin (2012) also share this idea, emphasizing the importance of differentiation based on specific resources to the life cycle of tourism destinations and stressing the importance of innovation for the “rejuvenation” of tourism areas.

It is important to notice that this general tendency is not equally observed in all destinations, namely if we consider the rhythms of evolution (each stage can have a different duration in different destinations, which results, not only from the

evolution of the destination itself but is also related to the competition with rival and similar places or to the evolution of demand and issuing markets).

In fact, in a recent article, Butler (2009) mentions the limits and problems of the model, considering the complexity of factors influencing tourism development: “it is clear that a simple model like the TALC cannot predict in detail the future of a specific destination engaged in the global competition that is tourism today. (...) This is a function of the increasing number of opportunities and options available to holiday makers in the 21st century. A unidirectional linear model is relatively unlikely to give an accurate prediction of the future of a complex product subject to rapid change and great competition”.

In the same sense, Russel (2006) concludes that “tourist destinations could be regarded as having, within themselves, a prescriptive change process or an internal logic that the life cycle seems to expose. Thus development and change should be capable of being predetermined. However, changes in tourism destinations can also be influenced by other elements including the environment (geographic, economic, political and social variables), the ideologies and beliefs of the groups and individuals in the destination, the available resources, past results and proposed objectives or strategies as well as chaos and random events”.

On the other hand, the evolution proposed by the TALC model does not have an universal application to every destination. For example, "Ready-made" destinations (like Cancún) can enter directly in the “development” stage, through

large investments in infra structures, massive promotion and organized travels at the international level. Finally, it is important to notice that the identification and measurability of these stages is not always clear, or even possible, due to the absence of statistical information, namely on the first stages of evolution of a tourism destination.

In an early attempt to operationalize the application of the TALC model, Haywood (1986) stressed six relevant dimensions to be considered: the unit of analysis; the relevant markets; the pattern and stages of the tourism area life cycle; the identification of the area's shape in the life cycle; the determination of the unit of measurement; and the determination of the relevant time unit. The consideration of these aspects implies that each destination has a particular process of evolution, not necessarily expressed by the "S-shaped" curve proposed in the original model. On the other hand, internal and external forces influence this evolution, requiring a structured analysis: rivalry among existing areas; developers and development of new tourism areas; substitutes for tourism and travel experiences; environmentalists and concerned publics who oppose tourism or tourism development; bargaining power of transportation companies, tour operators, travel intermediaries, accommodation and suppliers; needs, demands, perceptions, expectations and price sensitivity of the tourists; governmental, political and regulatory bodies and forces.

Even with the existence of important limits to the predictive possibilities of the model and to the precise identification of each stage in the evolution of a

destination, the TALC model is clearly a useful tool to understand the evolving character of tourism areas, their change, development, mutations of the competitive advantage determinants, economic impacts and environmental or cultural consequences, not only on the tangible local assets but also on intangible aspects of local daily life (Haywood, 2006).

In the same sense, the TALC model can be extremely useful to explain the cycles of economic growth in tourism dependent areas and the limits imposed by environmental constraints (Lozano et al., 2008; Wall, 1982), taking into consideration a large variety of aspects, like consumer preferences (demand), facilities and infrastructures (supply), economic, social and environmental questions (Papatheodorou, 2006), different types of entrepreneurs (Russel, 2006), the life cycle of tourists (Oppermann, 1995) or issues related to spatial interaction, stressing the sensitiveness of tourism to time and distance (Hall, 2006). Nevertheless, as Haywood (2006a) stresses, as tourism is "place sensitive, place demanding and place exhausting", the speed, process and extent of tourism development are different from place to place, implying that all life cycles are different and require the definition of capacity limits.

Since its presentation in 1980, the TALC model has been applied to different types of tourism destinations (specific hotels or resorts, cities, natural parks, regions, etc.), although there are often serious difficulties to define the precise boundaries of a tourism area. Small islands can be seen as an exceptional case, where these boundaries are clearly limited and several applications of the TALC

model have been proposed for these specific situations. An important example is the model proposed by McElroy (2006) for 36 islands in the Pacific and Indian Oceans, using a simplified and alternative model based on the Tourism Penetration Index, with three stages, collecting data related to socio-economic and demographic characteristics of the area for 10 years of evolution of the tourism activities.

In this work a similar simplified model (also with three stages) will be used, with statistical information for a shorter period (6 years) and a different geographical approach (NUTS 2 regions, according to the Eurostat definition).

The TALC model has also been applied to some specific destinations or attractions, such as natural parks, in different parts of the world, like Canada (Boyd, 2006) or China (Zhong et al., 2008), suggesting the large possibilities of application of this kind of analysis. In this case, the model is a useful tool to understand the limits of usage of a natural area as an element of tourism attractiveness and the importance of its adequate management in order to have a sustainable exploitation of this kind of resources.

Similarly, the TALC model has also been applied to cultural resources, namely to heritage cities, where an excessive tourism usage can imply serious damages to local material resources (buildings, monuments, etc.) and relevant changes in cultural behaviors, through the commodification of local cultural aspects (Russo, 2006; Malcolm-Davies, 2006). These approaches clearly highlight the importance

of an adequate management of cultural heritage for tourism proposes, imposing limits to usage according to the carrying capacity of buildings and cities or stressing the importance of preservation and maintenance, which require funding and investments.

The particular case of Venice (Russo, 2001) shows that, in the first stages of tourism development the benefits tend to spread for the regions surrounding an heritage city but, in the long term, important costs arise, not only in the city that motivated the attractiveness of a certain region, but will also tend to spread to the surrounding areas, which means that there is a spatial distribution of costs and benefits over time, linked to the evolution along the life cycle of a tourism destination related to heritage. The different impacts of tourism development on local economies and communities have also been analyzed by Martin (2006).

An analysis of tourism development in Heritage Cities, and particularly in the city of Venice, clearly shows the different special interactions that occur along the life cycle (Russo, 2001): "In the first stage, the area that intercepts the benefits extends well over the new-discovered destination. As development proceeds (for example, with the building of hotels) the two regions almost come to coincide. Later on, tourism revenues spread again to the rest of the region, while costs remain concentrated. If the core enters the declining stage, such costs may diffuse to the rest of the region. This spatial- economic interpretation of the lifecycle dynamics is relevant because it makes it clear that the origins of the stagnation and decline are to be sought in the expansion pattern of tourism itself".

Other approaches to the sustainability of tourism destinations applying the framework proposed by the TALC model have been applied in order to support strategic planning along the evolution of tourism areas, namely in mass tourism destinations (Rodriguez et al., 2008). A similar but alternative approach to the TALC model has been developed by Weaver (2000), who considers the stages proposed by Butler as one possibility of evolution among others, emphasizing the concepts of "intensity" and "regulation" and the need to control the number of visitors to a destination according to the characteristics, limits and carrying capacity of the local resources, especially those related with the ecosystems, stressing the importance of developing smaller scale kinds of alternative tourism, namely on coastal destinations.

More recently, Weaver (2010) developed another model for tourism development, addressing the relation between indigenous people and tourism development in order to define the six different stages for the sustainable development of tourism. This similar (but alternative) approach to the TALC model considers the stages proposed by Butler as one possibility of evolution among others, emphasizing the need to regulate the number of visitors to a destination to the characteristics, limits and carrying capacity of the local resources, especially those related with the ecosystems, stressing the importance of developing smaller scale kinds of alternative tourism, namely on coastal destinations.

Other applications of the TALC model regarding the sustainability of tourism

have been used to support strategic planning along the evolution of tourism areas, namely in mass tourism destinations (Rodriguez et al., 2008) or trying to identify signs of each stage of development, in order to anticipate potential problems and promote an adequate planning process. An example is the "Early Warning System" proposed by Avdimiotis (2009) for the Greek islands of the Aegean Sea, requiring the coordination between investments in infra structures, efforts on promotion, regulation of the number of visitors and accessibilities according to the carrying capacity and the sensitiveness of the places and calling for the involvement of all the relevant local stakeholders. Coccossis (2002) defines different dimensions for carrying capacity (environmental, social and economic) that influence the sustainability of tourism.

On the other hand, Diedrich and García-Buades (2009) explore the perceptions of the residents about the impacts of tourism activities as signals of the evolution of the tourism destinations, using them in order to prevent the negative consequences of excessive demand and pressure on local resources. In fact, residents tend to have a positive perception about the development of tourism in the first stages (related to increasing job opportunities, development of new services or new cultural interchanges) but this perception can become negative if there is a negative impact on daily life or relevant degradation in local resources.

These different perceptions of residents towards tourism development also emphasize the importance of the involvement of local stakeholders in the processes of tourism planning and in the governance mechanisms, in order to

ensure that the benefits of tourism spread for local communities and to prevent the negative consequences related to eventual excessive pressures resulting from tourism activities on the local resources or the resident's quality of life.

At the international institutional level, the European Commission (2002) defined an "Early warning system for identifying declining tourist destinations, and preventive best practices", trying to identify the relevant information to avoid the decadence of tourism destinations, with negative impacts on local economies, social cohesion and environmental quality. According to this document, the signals of decline can be related to a decrease of quality, a decrease of competitiveness, a decrease in the expenditures made by tourists and difficulties in assuring sustainability, stressing that the reasons for declining can be linked to external or internal factors.

Despite the difficult application of the TALC model to define or predict a precise evolution of a tourism destination, namely identifying the duration of each stage of development, the model proposes a group of "leading indicators" that are extremely useful to understand a general tendency of evolution for each destination (Berry, 2006).

Consequently, understanding those signs and indicators, taking into consideration the specific conditions and characteristics of each place, becomes a powerful tool to help to redesign strategies, promote new products and services, implement preservation policies or to explore new markets and opportunities (Hassan, 2000).

In fact, almost 30 years after developing and presenting the TALC model, Butler (2009) considers that the globalization of tourism, the increasing number of opportunities and the diversity of available options imply that it is not possible to obtain a detailed prediction about the evolution of a tourism destination basis on an unidirectional model. In fact, a tourism destination includes different products and services that are not necessarily in the same stage of evolution. Nevertheless, the TALC model is still useful in order to identify general tendencies, to anticipate problems and opportunities and to create adaptive strategies to respond to the evolution of tourism activity and its constraints.

Recent developments of the application of the TALC model try to deal with more complex information and non-deterministic approaches, such as using chaos theory in tourism to analyze the evolution of tourism destinations (McKercher, 1999; Correani and Garofalo, 2008; Cole, 2009).

In this work, a simplified application of the TALC model will be developed, taking into consideration three stages of evolution (Exploration, Development and Stagnation). The unit of analysis is the region, due to the possibility of collecting relevant and comparable information for the 67 regions taken into consideration (NUTS 2 from Portugal, Spain, France and Italy), over 6 years (2003 to 2008).

As the period of analysis is relatively short, it becomes extremely difficult (if not impossible) to establish an objective methodology to identify all the stages of the

TALC model (namely the distinctions between the first and second stage, exploration and involvement, or between the fourth and fifth stages, consolidation and stagnation). More detailed information regarding the stages not considered in this work could be obtained including observations over longer periods or comparing different periods of evolution.

Considering the limited period under analysis in this paper (six years), a simplified version of the model has been chosen, in order to identify the different possible situations for each region: exploration, development and stagnation, not taking into consideration the different possibilities that can arise in the last stages of the original model. Since the duration of the life cycle of the tourism destinations considered in this study is relatively long (organized and institutionalized tourism started to develop in the second half of the XX century in most of these regions but other forms of leisure and tourism existed already before that), this implies that the duration of each stage considered in this study is also long, which means that regions classified in the same stage can still show important differences among them (for example, Andalucía (Spain) is a region with a long tradition in tourism activities, while Azores (Portugal) or Extremadura (Spain) have a much more recent tradition, however all are classified in the development stage, as a result of the high growth rates of tourism demand registered in these regions).

Destinations with long duration of their tourism life cycles were analyzed by Agarwal (1997) (from 1760 to present), Getz (1992) (since the XVII century to

present), Lundtorp and Wanhill (2006) (from 1912 to 2011) or Lundgren (2006) (from 1840 to present). On the other hand, for some specific tourism destinations, such as forest parks (Zhong et al., 2008) or agro tourism (Pulina et al., 2006), much shorter periods were considered (around 30 years). Nevertheless, the purpose of this study is not to identify the duration of the life cycle (or their stages) of tourism destinations, but to identify what the position of each region is in a particular moment, assuming that this position is relevant for identification and specification of the determinants of tourism demand (which will be statistically confirmed in this analysis).

In this case, it was possible to identify if the regions were in the beginning of a process of tourism development (exploration), in fast development or in a mature stage (stagnation). This information has been extremely useful in order to create a dummy variable for the panel data model that will be exposed in chapter 3.

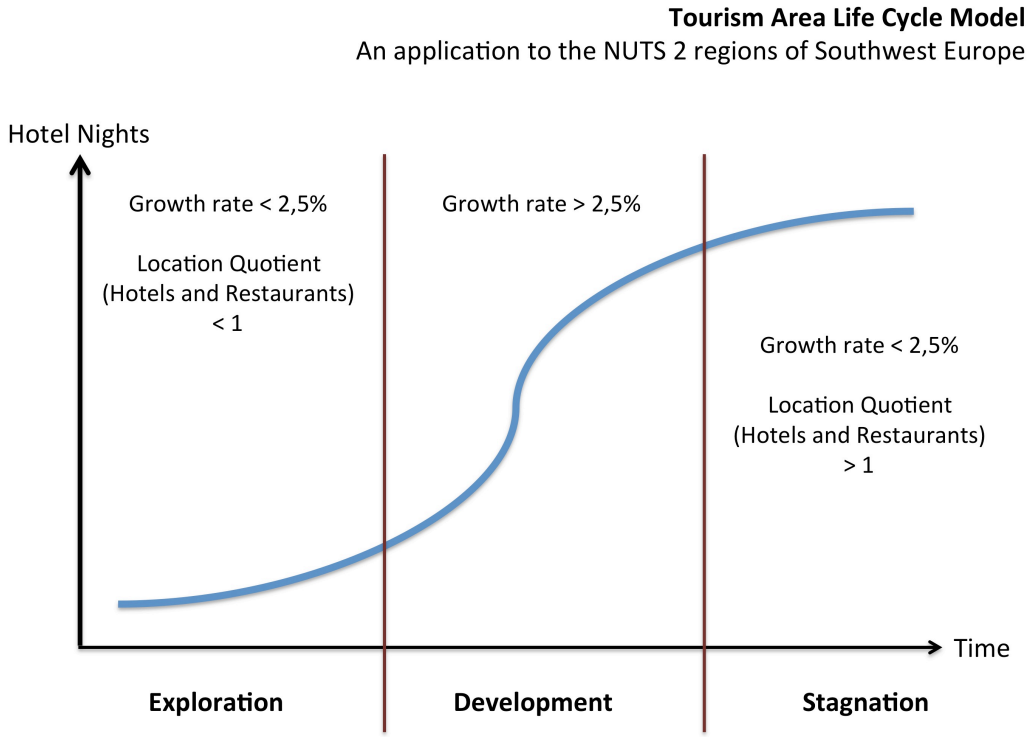
2.4.2. AN APPLICATION OF THE TALC MODEL TO THE REGIONS OF SOUTHWEST EUROPE

An application of a simplified version of the TALC model is developed in this article, assuming the NUTS 2 regions from Southwest Europe as unit of analysis. This choice is mostly related to availability of statistical data for all regions and to the generalized existence of relevant tourism management institutions and organizations at this level.

Nevertheless, it must be taken into consideration that this regional unit is not necessarily a tourism destination: in fact, many of these regions include different tourism products, not necessarily in the same stage of development. For example, the Spanish region of Andaluzia includes very relevant sun-and-sea mass tourism destinations (in the coast), a winter sports destination (Sierra Nevada), an eco-tourism area (Doñana Park) and important heritage cities, with cultural and urban tourism (like Seville, Cordoba or Granada).

Considering the limited period under analysis in this paper (six years), a simplified version of the model has been chosen, in order to identify the different possible situations for each region: exploitation, development and stagnation, not taking into consideration the different possibilities that can arise in the first and last stages of the original model (see Figure 2). This position will be used as a "dummy-variable" in the panel-data model developed in the next chapter to analyze the determinants of regional tourism demand in these regions.

Figure 2: An application of the TALC model



This position of each region is identified in two steps:

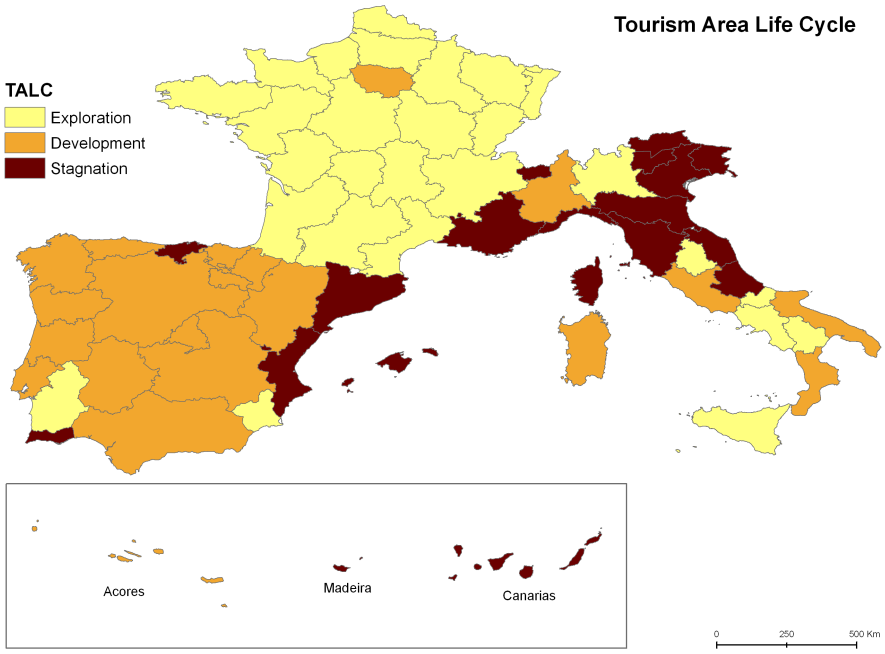
- the growth rate of nights spent by tourists in each region in the period 2003 – 2008 allows the identification of regions with high rates of growth (>2,5% per year). As it is assumed that the development stage of a tourism destination is characterized by high rates of growth in tourism demand, all these regions are positioned in the "Development" stage;

- as it is also assumed that the evolution along the different stages proposed by the TALC model is characterized by an increasing importance of economic activities

related to tourism, regions with higher specialization in tourism activities were positioned in the "Stagnation" stage (meaning that tourism is economically important but growth rates are low) and regions less specialized in tourism were classified in the "Exploration" stage; for these regions with low (or negative) rates of growth, the level of specialization has been calculated using a Location Quotient related to the employment in hotels and restaurants (dividing the weight of employment in hotels and restaurants for each region by the weight of employment in hotels and restaurants in all the regions).

It is important to notice that the different levels of development of other economic activities (namely the industrial sector) among regions can influence these results (for example, the Location Quotients obtained for the French regions are generally below those that were obtained for the other regions, which can also be related to the higher level of industrial development in France, when compared to Italy, Spain or Portugal; this aspect may have some influence in the classification of many French regions in the "Exploration" stage). The position of each region according to the TALC models is geographically represented in Figure 3.

Figure 3: Mapping the regional position according to the TALC model



These results are synthetized in the following table (Table 1), which also distinguishes the regions according to their geographical situation (West coast, Inland or South coast), which is another dummy variable used in the panel data model.

Table 1: Geographical position of the regions and TALC model

	Exploration	**Development**	**Stagnation**
West coast	Aquitaine, Baisse Normandie, Bretagne, Haute-Normandie, Languedoc-Roussilon, Nord – Pas-de-Calais, Pays de la Loire, Picardie, Poitou-Charentes (France); Alentejo (Portugal)	Asturias, Galicia, Navarra, Pais Vasco (Spain); Lisboa, Centro, Norte (Portugal)	Cantabria (Spain)
Inland	Umbria (Italy); Alsace, Auvergne, Bourgogne, Centre, Champagne-Ardenne, Franche-Comte, Limousin, Lorraine, Midi- Pyrenees, Rhone-Alpes (France)	Ile de France (France); Aragon, Castilla y Leon, Castilla-la-Mancha, Comunidad de Madrid, Extremadura, La Rioja (Spain)	Bolzano-Bozen, Liguria, Trento, Valle d'Aosta (Italy)
South Coast	Basilicata, Campania, Lombardia, Molise, Sicilia (Italy) Murcia (Spain)	Calabria, Lazio, Piemonte, Puglia, Sardegna (Italy) Andalucia (Spain) Açores (Portugal)	Abruzzo, Marche, Emilia Romagna, Friuli - Venezia Giulia, Toscana, Veneto (Italy); Provence - Alpes - Cote d'Azur, Corse (France); Canarias, Catalunya, Comunidad Valenciana, Illes Balears (Spain); Algarve, Madeira (Portugal)
Average Growth Rate	*< 2,5 %*	*> 2,5 %*	*< 2,5 %*
Location Quotient	*< 1*		*> 1*

3. REGIONAL TOURISM ATTRACTIVENESS IN SOUTHWEAST EUROPE: A PANEL DATA APPROACH

A panel data model that explains the competitiveness of tourism destinations in the 67 NUTS 2 regions from Italy, France, Spain and Portugal is presented in this chapter. The hypothesis to be test is whether the factors that contribute to differentiate tourism destinations and ensure their sustainability (the regional natural and cultural assets) have a positive relation with the evolution of tourism demand in these regions.

The model is presented in the first part of this chapter, with the description of the methodologies, variables, data, statistical tests and results. In the second part, a more detailed explanation of the role of each variable is presented, with an analysis and representation of the data collected for each variable.

3.1. THE MODEL, METHODOLOGY, VARIABLES AND RESULTS

The panel data model used in this study will be presented in the first part of this chapter, with a brief description of its origins, characteristics and advantages.

In the second part, the regional unit of analysis, the dependent and explanatory variables and the data used in the model will be exposed and discussed, taking into consideration their advantages and limits for the purposes of this study.

Finally, the operations and tests that were computed and the results that could be obtained will be presented.

3.1.1. THE PANEL DATA MODEL

The panel data model developed in this chapter defines a regional tourism demand function for the NUTS 2 regions from Italy, France, Spain and Portugal, not considering the French non-European regions (Guadalupe, Martinique, Guyane and Reunion) and the Spanish regions of Ceuta and Melilla. 67 regions were taken into consideration, during six years (2003 - 2008). These regions were responsible, in 2008, for 48,5% of the nights spent in European hotels and similar establishments, which shows their importance for tourism in Europe.

As the purpose of this study is to analyze a large group of regions (67) along a certain period (6 years), a panel data model has been chosen. Panel data models include cross-sectional data that reflect the differences among regions and time-series data that reflect the evolution along time, allowing the development of complex analysis of economic processes and their spatial effects.

This methodology allows the consideration of more information, increases the variation and reduces the collinearity between variables, which results in an increment in the degrees of freedom and more efficient estimations (Elhorst, 2003). Although these methodologies started to be developed in the mid XX century, only in the last three decades they have became generalized, in result of the very large increment of geo-referenced statistical information and the development of easy-to-use software tools (Florax and Van der List, 2003).

Applications of panel data models to analyze tourism are becoming more frequent in the last years. These applications are related to the study of the relationship between tourism and economic growth at regional, national or international level (Narayan et al., 2010; Proença and Soukiazis, 2008; Cortés-Jimenez, 2008; Eugenio-Martin et al., 2004) or other impacts (like taxes or trade) related to tourism activities, (Keum, 2010; Maloneya and Rojas, 2005; Garin-Muñoz and Amaral, 2000). Song and Li (2008) propose a systematic review of panel data model applications to tourism demand forecasting.

The statistical information used in this model (secondary data) was collected at official European and national institutions (Eurostat; European Commission - Environment DG; UNESCO; Instituto Nacional de Estatística - Portugal; Instituto Nacional de Estadística - Spain; Institut National de la Statistique et des Études Économiques - France; Istituto Nazionale di Statistica - Italy) for the period between 2003 and 2008 (except for the variable related to Investment in Hotels and Restaurants, assuming that the impact of investment has implications on the attractiveness in the following year; in this case, data were collected from 2002 to 2007).

Among the advantages of using secondary data are the possibility to merge information from different sources in order to develop new trends over time, the creation of new relationships between information that was not related or the shift of focus from individual data subjects to broader social and comparable analysis (Finn et al., 2000).

All the alculations for this panel data model were made using R 2.10.1 for Mac OS (Croissant and Millo, 2008) and the maps with geographical representation of the statistical information to be presented were produced with ArcGis 10 for Windows Vista.

3.1.2. REGIONAL UNIT OF ANALYSIS, VARIABLES AND DATA

The regions under analysis have similar climatic, geographical, cultural, ecological, political and institutional conditions. Nevertheless, there is a wide range of tourism products and services supplied in these destinations: "sun-and-sea", golf, ecotourism, cultural tourism, city-breaks, urban tourism, congresses, winter sports, etc.

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. In fact, even inside the same NUTS 2 region it is possible to identify different tourism destinations: as it has been mentioned before, a clear example is the Spanish region of Andalucia.

Nevertheless, taking into consideration the difficulties to obtain relevant and comparable data in a smaller scale (like NUTS 3 regions) and the generalized existence, at the level of NUTS 2 regions, of institutional organizations for tourism management and promotion, economic development or cultural and environmental management and protection, this scale of analysis has been chosen (even if it is clear that a NUTS 2 region is not necessarily a tourism destination).

The model includes a dependent variable that measures the tourism attractiveness of each region (number of nights spent in hotels and similar establishments), as a proxy for regional competitiveness.

The main purpose of this study is to understand whether natural and cultural resources have a positive impact on regional tourism demand, assuming that these specific local assets can contribute to differentiate the destinations if they are based on innovative products and services and high qualification of workers. In this sense, these variables were considered "new factors of competitiveness". It must be stressed that, if there is an adequate management of natural and cultural resources, these factors that lead to differentiation are not only linked to competitiveness but also to the sustainability of tourism destinations.

It is assumed that local natural and cultural assets are the basis for the differentiation of tourism destinations according to the characteristics of the territory but it is also important to notice that availability of these assets does not necessarily mean that they are exploited as tourism resources: 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. Consequently, natural and cultural resources are considered as "resources" that are available, in different proportions, in each region (due to the absence of relevant and comparable data, it was not possible to compare their usage as tourism products).

The regional cultural assets that contribute to the identity of tourism destinations were measured considering the number of heritage sites classified by UNESCO at regional level and, in the same sense, the natural resources were evaluated considering the proportion of protected areas included in Natura 2000 in the

regional territories. This means that these assets are taken into consideration independently of their integration in the regional tourism supply. The purpose of the inclusion of these variables in the model is to identify if there is some relation between the availability of these resources in each region and the regional tourism performance.

As the integration of these resources in the regional tourism supply requires innovative activities and highly qualified workers, these variables were also considered as "new" factors of competitiveness.

As the efforts of innovation are measured at aggregate regional level, considering the proportion of work force involved in R&D activities, not necessarily in tourism activities, this variable is a proxy for the regional dynamics of innovation and the interactions between firms and R&D institutions (figure 1, chapter 2.2.1). This variable (work force in R&D activities) is measured according to the definition followed by the Eurostat (work force with tertiary level of education or working in jobs requiring that level of qualification).

Although this criteria can be considered too large to define the effective innovation activities, it provides a useful standard for international comparisons over time. As in the previous case, the purpose of this analysis is to understand whether there is some relation between the dynamic and the interactions within the regional innovation systems and the regional tourism performances.

Other elements of the regional tourism systems are considered, in order to obtain a comprehensive perspective of the factors that influence the attractiveness of tourism destinations and taking into consideration the availability of comparable statistical data. These are called “traditional factors of competitiveness”. Although it does not cover all the possible factors, this group of variables considers some of the essential aspects that contribute to the competitiveness of tourism destinations:

- factors related to the differentiation of tourism destinations:

    - regional specific resources related to nature (percentage of regional territory included in Natura 2000);
    - regional specific resources related to cultural heritage (number of heritage sites classified by UNESCO at regional level);
    - regional efforts on innovation (percentage of the regional work force in R&D activities);
    - qualifications of workers at regional level (percentage of workers with tertiary level of education);

- factors related to economic conditions:

    - internal and external markets (evolution of GDP at national and EU15 levels);
    - regional investment (in hotels and restaurants located in each region, in the previous year);

- demand in rival destinations (number of nights spent in hotels and similar establishments from destinations with comparable information available and offering similar holiday experiences in terms of environment, temperature, travel distance from issuing markets or political conditions, but located in south-eastern Europe – Cyprus, Croatia, Greece and Turkey);

- factors related to infrastructures:

  - international transport (existence of international airport in the region);
  - accommodation (number of beds in hotels and similar establishments at regional level);

Two dummy variables were also included in the model: one related to Geography (the geographical situation of each region - inland, south coast or west coast) and the other to History (the position of each region in the tourism area life cycle - exploration, development or stagnation), which was presented in the previous chapter.

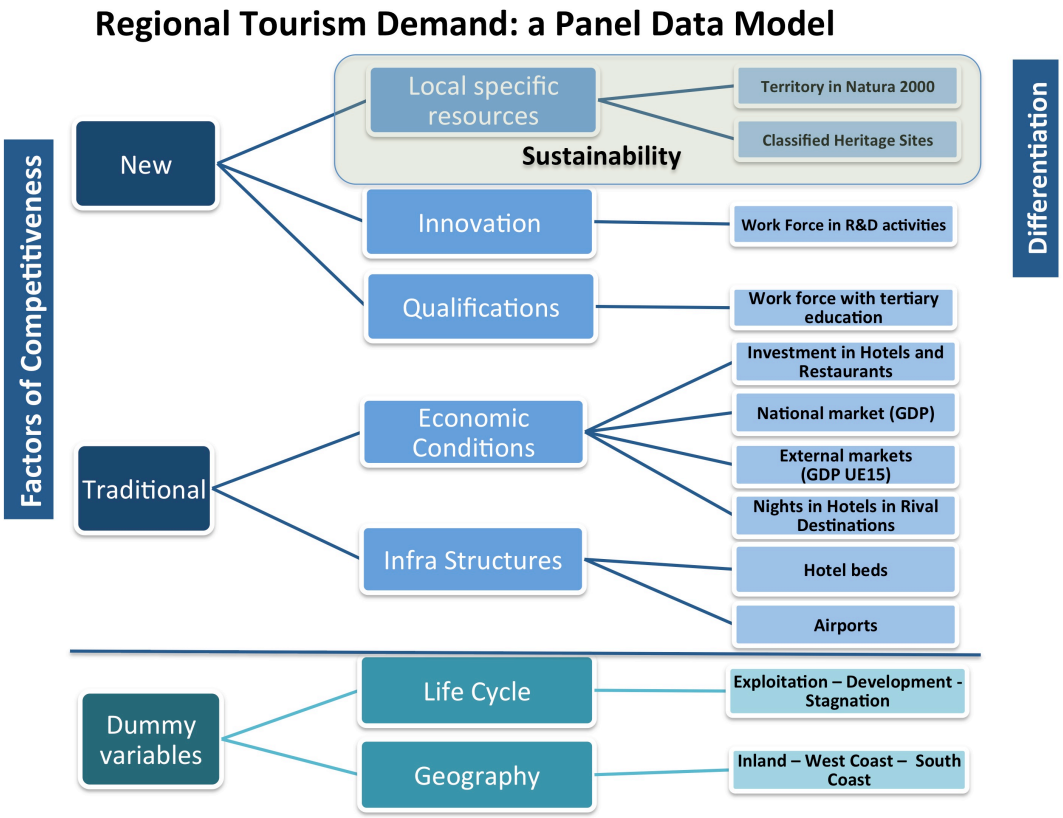
Questions related to destination management or promotion, policy framework, security, existence of tourism oriented events or infra-structures were not taken into consideration due to the difficulty to obtain comparable data and assuming that these conditions are similar in the regions under analysis.

Prices and exchange rates were also not considered, once travel costs are mostly

defined at international level (namely the transports costs) and almost all these regions use the euro, like their main markets (the exception is the United Kingdom, with a relatively stable relation with the Euro over the period taken into consideration in this study).

The model is represented in the following diagram (Figure 4) and it emphasizes the role of the "new" factors of competitiveness that can stimulate the differentiation of tourism destinations and support the sustainability of tourism development (innovative products and services based on the sustainable exploitation of specific natural and cultural resources, which require more qualified workers).

Figure 4: Presentation of the Panel Data Model



The following table (Table 2) shows the variables and data that were used, including the period taken into consideration for each one and the names that are used for each variable in the description of the model (a more detailed explanation of each variable, including their objectives, sources of information and main observations will be exposed and geographically represented in the next chapter).

Table 2: Variables and data used in the Panel Data Model

Topic	**Indicator**	**Period**	**Name**
Competitiveness	Nights in Hotels	2003-2008	Nights
Accommodation	Beds in Hotels	2003-2008	Beds
Transport	Existence of airport	2003-2008	Air
Investment	Hotels and restaurants	2002-2007	Invest
Competition	Nights in hotels (rival destinations)	2003-2008	Rivals
Internal market	National GDP	2003-2008	GDP
External market	GDP at EU 15	2003-2008	GDPEU15
Qualifications	Work force with tertiary education	2003-2008	WF
Innovation	Work force in R&D activities	2003-2008	ST
Cultural assets	Heritage sites classified by UNESCO	2003-2008	Heritage
Natural assets	Territory in Natura 2000	2008	Natura
Geography	West coast – Inland – South Coast		Geo
Life Cycle	Exploration–Development -Stagnation	2003-2008	TALC

3.1.3. TESTS AND RESULTS OF THE MODEL

Typically, in the specification of these models, the first step is the computation of an Hausman test, in order to choose between a fixed effects or a random effects model (Elhorst, 2003; Hsiao et al., 2002; Croissant and Millo, 2008). However, as in our context the model uses several time-invariant variables (the variable related with natural assets and the dummy variables related to the geographical position and the stage of evolution along the Tourism Area Life Cycle), the results obtained from this test are not necessarily reliable, as Hahn et al. (2009) suggest.

Consequently, three different types models were specified (fixed-effects, random-effects and pooling-effects), in order to identify which would provide the best results. Considering the characteristics of the variables included in the model, the Random or the Polling Effects models can provide relevant results, as they allow for the introduction of time-invariant variables (like those related to the geographic situation or the position in the TALC model) and assume the existence of differences among regions that are related to their particular characteristics and not caused by the independent variables.

After fitting some alternative regressions and transformations of the variables, the best results were obtained with a Pooling Effects Model and applying logarithms to the variables “nights”, “beds”, “GDP”, “GDP EU15”, “Invest” and “Rivals”.

In a Polling Effects Model, there are no unique attributes of individuals or

universal effects across time (in a fixed effects model there are unique attributes of the individuals that do not vary along time and in a random effects model there are attributes of the individuals which variation is nor correlated with the regressors).

It was possible to observe that no significant relation was found between the dependent variable and the explanatory variables "GDP EU15", "Rivals" and "WF", which means that the evolution of GDP at EU15 level (a proxy for the dynamics in the external markets), the demand in rival destinations (number of nights in hotels from Turkey, Greece, Croatia and Cyprus) and the qualifications of workers did not have direct relation with the regional tourism demand.

The final model is expressed as:

$$\text{Lognights}_{it} = ß_0 + ß_1 \text{ logbeds}_{it} + ß_2 \text{ air}_{it} + ß_3 \text{ log GDP}_{it} + ß_4 \text{ loginvest}_{it-1} + ß_5 \text{ ST}_{it} + ß_6 \text{ Heritage}_{it} + ß_7 \text{ Natura}_{it} + ß_8 \text{ GEO1}_{it} + ß_9 \text{ GEO2}_{it} + ß_{10} \text{ TALC 1}_{it} + ß_{11} \text{ TALC 2}_{it} + \mu_{it}$$

For each variable included in the model, 402 observations were considered (67 regions and 6 years), except for the variables Natura, GEO and TALC (67 observations for the year 2008). The R-square value (0,9416) obtained with this model is very satisfactory (total sum of squares is 455,38 and residual sum of squares is 26,57). The descriptive statistics for the variables included in the final model (not considering the dummy variables) are presented in Table 3:

Table 3: Descriptive statistics

	Mean	**SD**	**Min.**	**Max.**
Nights	15786059	17785695	652171	86781961
Beds	202555,9	183847,9	6350	714520
GDP	23953,0	4359,9	13300	30400
Investment	235840,2	272602,6	4433	1929681
ST	0,3735	0,0939	0,1316	0,6434
Natura	0,1999	0,0967	0,0269	0,4677
Heritage	2,2388	1,7536	0	7

In order to identify possible problems of multicollinearity among the independent test, a VIF (Variance Inflation Factor) test has been calculated. It is commonly accepted that problems of multicollinearity can be relevant when VIF is above 10 (Manquardt, 1980; Lin, 2008). Nevertheless, O'Brien (2007) points out that even when the VIF is above 10, that does not necessarily implies important problems of multicollinearity.

In this model, the VIF test presents values below 5 for all the independent variables, as it is shown in Table 4.

Table 4: VIF (Variance Inflation Factor) test for the independent variables

logbeds	airports	loginvest	logGDP	ST	Heritage	Natura	Geo1	Geo2	Talc1	Talc2
4,85	2,06	4,13	4,08	2,89	1,61	2,09	1,66	2,33	2,68	2,44

The estimators and the statistical relevance of the parameters estimates are shown in the following table (Table 5). All the estimates are statistically relevant (even

for the variable GEO1, very close to the limit of 10%):

Table 5: Estimations of the parameters of the model

	Estimate	St. Error	t-value	Pr(>|t|)	Sign.
Intercept	13,827	1,196	11,563	$<2,2e^{-16}$	***
logbeds	0,707	0,028	25,019	$<2,2e^{-16}$	***
air	0,137	0,043	3,1619	0,002	**
loginvest	0,239	0,022	10,839	$<2,2e^{-16}$	***
logGDPn	-0,934	0,126	-7,398	$8,531e^{-13}$	***
ST	1,124	0,228	5,010	$8,272e^{-7}$	***
Heritage	0,024	0,009	2,747	0,006	**
Natura	0,688	0,198	3,479	0,001	***
Geo1	-0,062	0,038	-1,617	0,107	.
Geo2	-0,298	0,044	-6,756	$5,184e^{-11}$	***
TALC1	-0,275	0,044	-6,312	$7,516e^{-10}$	***
TALC2	-0,227	0,044	-5,174	$3,681e^{-7}$	***

The positive impact of the new factors of competitiveness detected by this model is the most important result of its application: in fact, it was possible to observe that natural resources, heritage assets and regional efforts on innovation are positively related with regional tourism competitiveness.

The results also show an expected positive relation between the existence of infrastructures (beds and airports), investment in hotels and restaurants in the previous year and the regional tourism competitiveness.

It should also be mentioned that the variables used to evaluate the impact of the evolution in the domestic (national GDP) and external markets (GDP at the EU15 level, a group of countries that includes the major issuing markets for the

destinations under analysis) did not show the expectable impact: the EU15 GDP was found not statistically relevant and the national GDP showed a negative correlation with the regional tourism demand, suggesting only that tourism is less important, in relative terms, in more developed economies.

As the model includes some dummy variables, it is possible to organize its results according to the groups that result from those variables, which have different independent terms, reflecting different overall impacts of the independent variables on the regional tourism demand in each group. Generally, these impacts are higher in the South Coast regions and lower in the West Coast. These results are exposed in Table 6.

Table 6: Independent terms according to the position of each region

Regional Position		**Independent term**	
South Coast	Stagnation	$ß_0$	13,82722
Inland	Stagnation	$ß_0 + ß_8$	13,76539
South Coast	Development	$ß_0 + ß_{11}$	13,60016
South Coast	Exploration	$ß_0 + ß_{10}$	13,55211
Inland	Development	$ß_0 + ß_8 + ß_{11}$	13,53833
West Coast	Stagnation	$ß_0 + ß_9$	13,52891
Inland	Exploration	$ß_0 + ß_8 + ß_{10}$	13,49020
West Coast	Development	$ß_0 + ß_9 + ß_{11}$	13,30185
West Coast	Exploration	$ß_0 + ß_9 + ß_{10}$	13,25381

3.2. OBSERVATIONS ON THE VARIABLES

The large quantity of data related to the evolution of tourism in the period between 2003 and 2008 allows the characterization and discussion of the processes of tourism development in the regions taken into consideration.

In the first part of this chapter, the data related with regional competitiveness (number of nights spent in hotels and similar establishments in each region) will be presented and systematized.

In the second part, the data related to the "new factors of competitiveness" will be presented and discussed: regional efforts in innovation, regional natural resources and regional cultural assets.

In the third part, the "traditional factors of competitiveness" will be exposed: economic conditions related to markets dynamics, evolution of demand in rival destinations and regional investment in hotels and restaurants.

Finally, the dummy variables included in the model, related to the geographic position of each region and their position in the Tourism Area Life Cycle will be presented.

This presentation is complemented by a clarification of the sources and meaning of the data used for each variable included in the panel data model (annex).

3.2.1. DEPENDENT VARIABLE – COMPETITIVENESS

The dependent variable in the panel data model developed in this work aims to measure the regional tourism competitiveness. For this purpose, and taking into consideration available statistical information, the number of nights spent in hotels and other establishments in each region has been chosen.

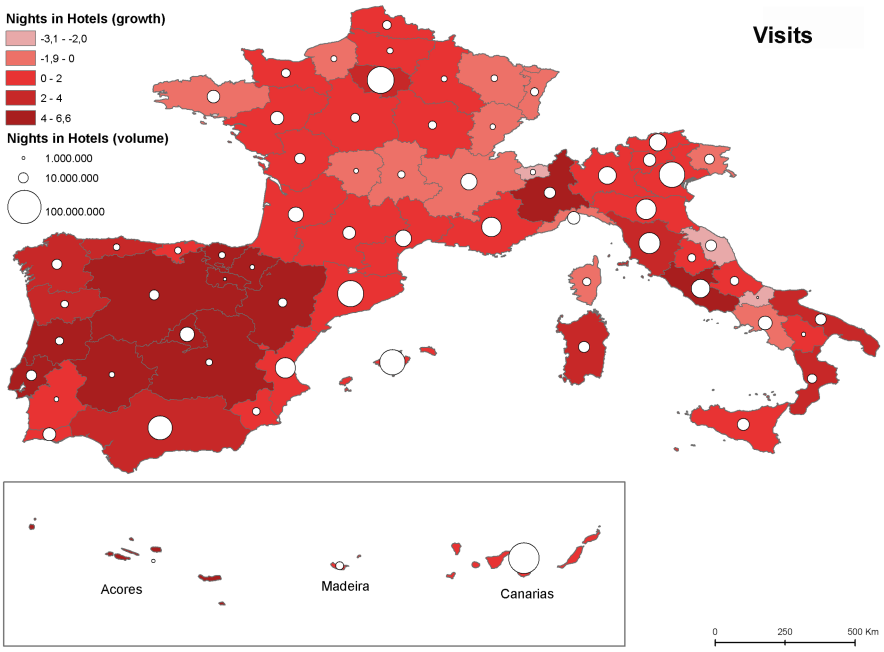
Nevertheless, the choice of this variable implies some problems that must be considered: a high number (or a high growth rate) of nights spent in hotels is not necessarily positive for local development, mostly if we consider it in the long-run, once there are limits for the usage of the territory and the carrying capacity of natural and cultural resources. In fact, for tourism destinations in late stages of their life cycles, increasing the number of visitors can even have negative implications. On the other hand, this variable does not take into account the tourists who prefer to buy a house in a tourism destination, creating a bigger pressure on the territory and often contributing for speculative movements in the housing local markets, with negative consequences on local families.

Consequently, other variables could have been used, like the revenues generated by tourism (that can also be calculated in relation to the local population), the market share of a tourism destination (which has the same problem as the number of nights in hotels), the number of tourist that repeat the visit to a destination, etc.

The large quantity of data related to the evolution of tourism over the period between 2003 and 2008 allows the characterization and discussion of the processes of tourism development in the regions under analysis.

The following map (Figure 5) shows the geographical distribution of this variable.

Figure 5: Nights spent in Hotels and similar establishments



From the data it was observed that:

- Italy and Spain have one third of the nights spent by tourists in this area in 2008 (34% each), France 27% and Portugal 4,3%;

- 50% of the nights spent by tourists were concentrated in 10 regions (5 in Spain, 3 in Italy and 2 in France);

- 13 regions registered an annual average growth rate equal or above 4% (8 in Spain, 3 in Portugal and 2 in Italy)

- the capital cities from these countries belong to regions among the group with highest growth rates (Rome - Lazio, Madrid and Lisbon) or highest volume (Paris – Ile de France) suggesting the increasing importance of urban tourism, mostly related with cultural activities;

- 14 regions registered a decrease in the number of nights spent by tourists (13 in France and 1 in Italy).

The following table (Table 7) systematizes these major results, considering the regions with highest growth rates (left side) and with highest volume (right side) of nights spent in hotels and similar establishments.

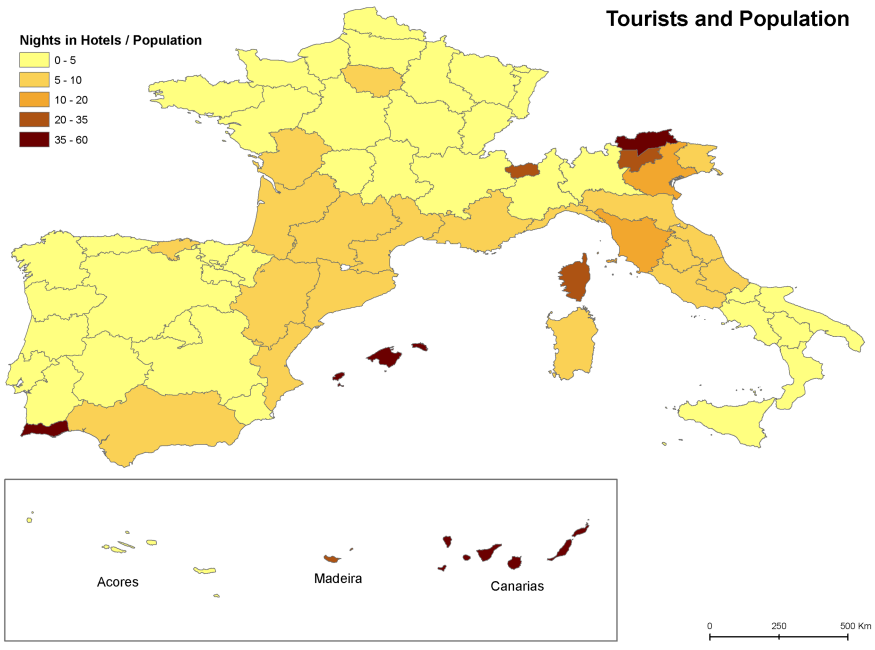
Table 7: Nights spent in Hotels and similar establishments (growth and volume)

Nights in Hotels	**Annual Average Growth**
Açores (PT)	6,6
Com. de Madrid (SP)	6,6
Lisboa (PT)	6,4
Lazio (IT)	5,7
Aragón (SP)	5,4
Castilla-Mancha (SP)	5,3
Piemonte (IT)	5,3
Extremadura (SP)	5,1
Castilla León (SP)	4,9
País Vasco (SP)	4,7
Centro (PT)	4,4
La Rioja (SP)	4,3
Navarra (SP)	4,1

Nights in Hotels	**%**	**Acum. %**
Canarias (SP)	7,8	7,8
Ile de France (FR)	6,2	14,0
Calatuña (SP)	5,8	19,7
Illes Balears (SP)	5,5	25,3
Veneto (IT)	5,5	30,8
Andalucia (SP)	5,0	35,8
Toscana (IT)	3,8	39,6
Emilia-Romagna (IT)	3,5	43,1
Com. Valenciana	3,5	46,6
Prov-Alp-Côte d'Azur	3,2	49,8
Other 57 Regions	*50,2*	100,0

The following map (Figure 6) shows the relation between the number of nights spent in hotels and similar establishments in each region and the local population. It is possible to identify some regions (with darker colors) where this relation is becoming unsustainable, due to the excessive number of tourists compared to the native population, which can imply a tendency for commodification of cultural assets and a large pressure on the usage of natural resources, infra-structures and transport services or a relevant interference on the local daily life, namely related to the congestion of public spaces or services. Tourists using houses for temporary residence were not considered in this study.

Figure 6: Tourists and local population



It is still important to notice that the impact of tourism accommodation on the territories is necessarily larger that the one which is motivated by the existence of hotels: in fact, as it will be discussed in the conclusions of this work, other forms of accommodation (like those related to residential tourism) can imply even more relevant negative impacts on local territories and they were not considered in this analysis, due to the difficulties to obtain comparable data.

3.2.2. INDEPENDENT VARIABLES – NEW FACTORS OF COMPETITIVENESS

The large quantity of data related to the evolution of tourism in the period between 2003 and 2008 allows the characterization and discussion of the processes of tourism development, regional competitiveness and territorial sustainability in the destinations under investigation.

The "new" factors that determine the competitiveness of tourism destinations considered in this model include local specific resources related to nature and culture, which allow, through innovative products and services, the creation of a unique touristic product and the promotion of sustainability. A positive correlation between these variables and regional tourism competitiveness has been found and the data related to these variables will be presented in this chapter.

The level of qualifications of workers at regional level has also been taken into consideration but no relevant statistical relation with competitiveness has been found (and the related data will not be presented).

The regional efforts for innovation were measured using the percentage of work force involved in Scientific and Technological activities (see annex for a clear specification of this issue) as a proxy to measure the interactions within the regional systems of innovation, between tourism companies, consumers, suppliers and other entities of the scientific and technological system.

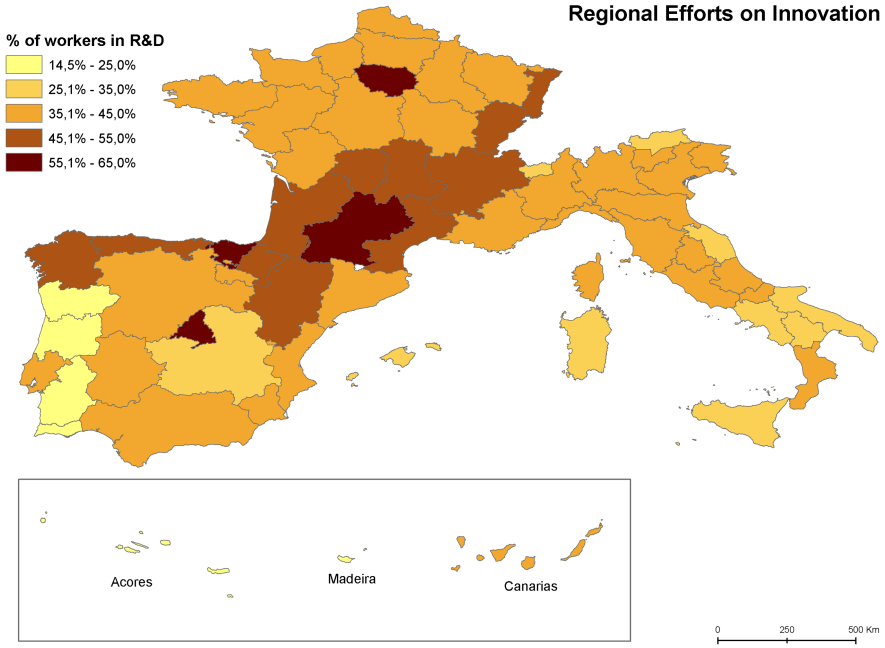
It was possible to observe that 17 regions had more than 45% of the active population in R&D activities in 2008 (9 in France, 7 in Spain and 1 in Italy), while 16 regions had 35% or less of their active population in R&D activities 2008 (8 in Italy, 2 in Spain and 6 in Portugal, occupying the last six positions). The regions with the highest values are on the left side and with the lowest values on the right side of Table 8.

Table 8: Regional work force (%) involved in R&D activities

Ile de France (FR)	**64,0**	Basilicata (IT)	**35,0**
País Vasco (SP)	**63,9**	Bolzano-Bozen (IT)	**34,9**
Com. de Madrid (SP)	**59,0**	Marche (IT)	**34,8**
Midi-Pyrénées (FR)	**55,3**	Campania (IT)	**34,6**
Navarra (SP)	**49,3**	Sicilia (IT)	**34,1**
Languedoc- Roussilion (FR)	**48,7**	Castilla-Mancha (SP)	**34,0**
Rhône-Alpes (FR)	**48,5**	Puglia (IT)	**33,2**
Cantabria (SP)	**48,5**	Sardegna (IT)	**31,5**
Asturias (SP)	**48,1**	Valle d'Aosta (IT)	**30,6**
Aquitaine (FR)	**47,6**	Illes Balears (SP)	**30,0**
Aragón (SP)	**47,1**	Alentejo (PT)	**23,5**
Franche-Comté (FR)	**46,0**	Algarve (PT)	**20,6**
Auvergne (FR)	**45,9**	Madeira (PT)	**19,8**
Alsace (FR)	**45,4**	Norte (PT)	**19,0**
Galicia (SP)	**45,1**	Centro (PT)	**17,7**
Limousin (FR)	**45,1**	Açores (PT)	**14,5**
Lazio (IT)	**45,0**		

This information is also exposed in the following map (Figure 7).

Figure 7: Regional efforts on Innovation



As the essential assumption for this analysis is that natural and cultural assets are the basic elements to combine competitiveness and sustainability, these assets are also included in the "new factors of competitiveness".

As mentioned before, these assets were not analyzed as "tourism products" (once there is no available comparable data) but as "tourism resources" that can contribute to the differentiation of tourism destination through innovative activities. Nevertheless, a clear positive relation between the availability of these assets and regional tourism competitiveness has been found.

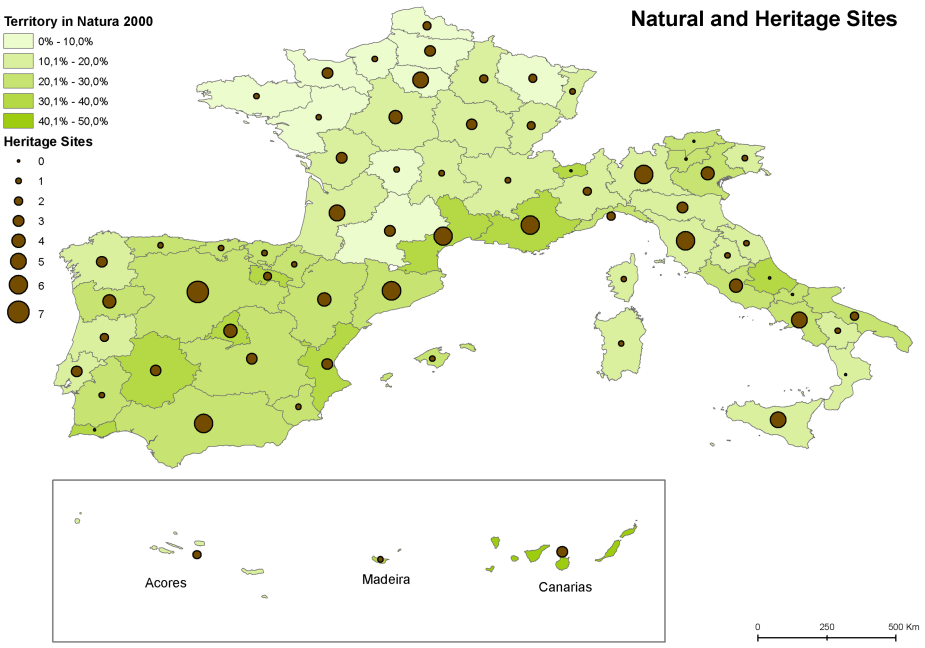
Natural resources have been measured taking into consideration the percentage of the regional territory included in Natura 2000 (in 2008, the last year considered in this study), which is a network of protected areas defined at the European level (more detailed information in the annex). According to these data, 11 regions have more than 30% of its area in Natura 2000 (5 in Spain, 2 in France, 2 in Portugal and 2 in Italy).

Cultural resources were measured considering the evolution of the number of heritage sites classified by UNESCO at the regional level, from 2003 to 2008. When one heritage site is distributed for more than one region (like the Route of Santiago), one site per region has been considered. According to this information, 11 regions have 5 or more classified sites (3 in Spain, 4 in France, 5 in Italy) and 7 regions have no heritage sites recognized by this organization (Algarve, in Portugal, and 6 Italian regions).

Other data could have been used in order to estimate the impact of cultural resources on regional tourism demand (visits to museums, attendance to cultural events, etc.) but it was not possible to find comparable data strictly related to tourism.

The results related to the regional distribution of the natural and cultural assets taken into consideration in this work are exposed in the following map (Figure 8), which shows the overall distribution of these resources among the regions.

Figure 8: Natural and cultural resources



Finally, the following table (Table 9) shows the regions with 4 or more heritage sites classified by UNESCO (left side) and the regions with more than 25% of their territory under protection of Natura 2000.

Table 9: Natural and Cultural resources at Regional level

4 or more Heritage Sites		**More that 25% of the territory in Natura 2000**	
Castilla y León (SP)	7	Canarias (SP)	46,8
Languedoc-Roussillon (FR)	6	Comunidad de Madrid (SP)	39,8
Provence-Alpes-Côte d'Azur (FR)	6	Comunidad Valenciana (SP)	37,4
Lombardia (IT)	6	Algarve (PT)	36,5
Andalucia (SP)	6	Abruzzo (IT)	36,0
Cataluña (SP)	6	Languedoc-Roussillon (FR)	33,7
Toscana (IT)	6	La Rioja (SP)	33,3
Île de France (FR)	5	Madeira (PT)	31,1
Sicilia (IT)	5	Provence-Alpes-Cote d'Azur (FR)	30,9
Aquitaine (FR)	5	Valle d'Aosta / Vallee d'Aoste (IT)	30,3
Campania (IT)	5	Extremadura (SP)	30,2
Lazio (IT)	4	Cataluña (SP)	29,9
Galicia (SP)	4	Andalucia (SP)	29,5
Comunidad de Madrid (SP)	4	Aragon (SP)	28,4
Aragón (SP)	4	Trento (IT)	28,0
Centre (FR)	4	Cantabria (SP)	27,7
Veneto (IT)	4	Campania (IT)	27,5
Norte (PT)	4	Asturias (SP)	27,0
		Molise (IT)	26,4
		Castilla y Leon (SP)	26,1
		Liguria (IT)	25,8

3.2.3. INDEPENDENT VARIABLES – TRADITIONAL FACTORS OF COMPETITIVENESS

Among the "traditional" factors of competitiveness considered in the panel data model are the economic conditions of the main issuing markets for the tourism destinations under analysis. Considering that the internal (national) market is extremely important for all these regions and that among the international markets, the biggest issuing countries belong to the European Union 15 group (namely the United Kingdom, Germany and The Netherlands), the evolution of GDP at the national level has been considered for the first case (internal markets) and the GDP at the EU-15 level has been used for the second case (external markets).

Considering the difficulty to obtain relevant and comparable data in order to identify the specific weight of each issuing market to each tourism destination, this analysis has not been done. Nevertheless, it is important to include it in further developments of this works, aiming to increase the ability of the model to predict the evolution of demand and identify the effects of the recent economic crisis, which are different among these issuing markets, on the tourism destinations.

In fact, it was not possible to obtain good results with the variables that have been chosen: the evolution of GDP-15 (external markets) did not show positive correlation with regional competitiveness and the evolution of GDP at the national

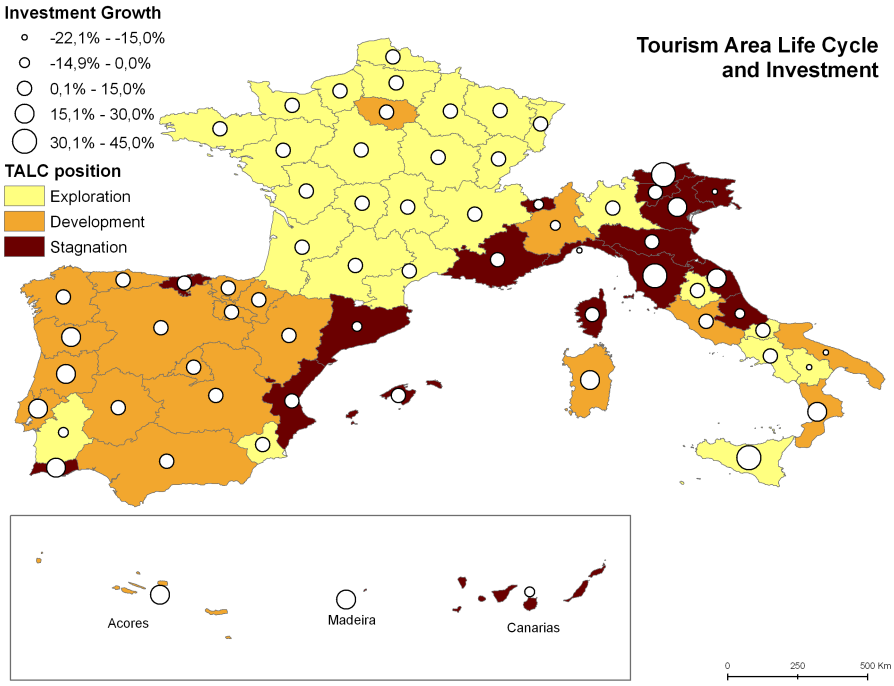
level revealed a negative correlation with the evolution of competitiveness, suggesting that the weight of tourism in the national economies is larger in the less developed economies.

On the other hand, the evolution of demand in rival destinations did not show any correlation with tourism demand in the regions under analysis. The effect of these rival destinations has been measured taking into consideration the evolution of the aggregate level of demand registered in countries with similar travel distances to the issuing markets and similar political, institutional, climacteric, cultural and natural conditions (Croatia, Cyprus, Greece and Turkey).

As the main focus of this work was to identify the effect of the "new factors of competitiveness" on regional tourism demand, the negative results obtained with the variables related to the evolution of issuing markets or rival markets did not cause a relevant problem to the analysis. Nevertheless, it is a question that should be reviewed in order to improve the model.

As expected, the evolution of regional investment in hotels and restaurants (from 2002 to 2007) revealed a lagged relation with tourism demand. The following map (Figure 9) establishes a relationship between the evolution of regional investment in tourism (hotels and restaurants) and the position of each region in the Tourism Area Life Cycle. It is possible to identify some regions in the stagnation stage where investment registered a very strong growth (namely in the North of Italy and the South of Portugal).

Figure 9: Investment in Tourism and Life Cycle

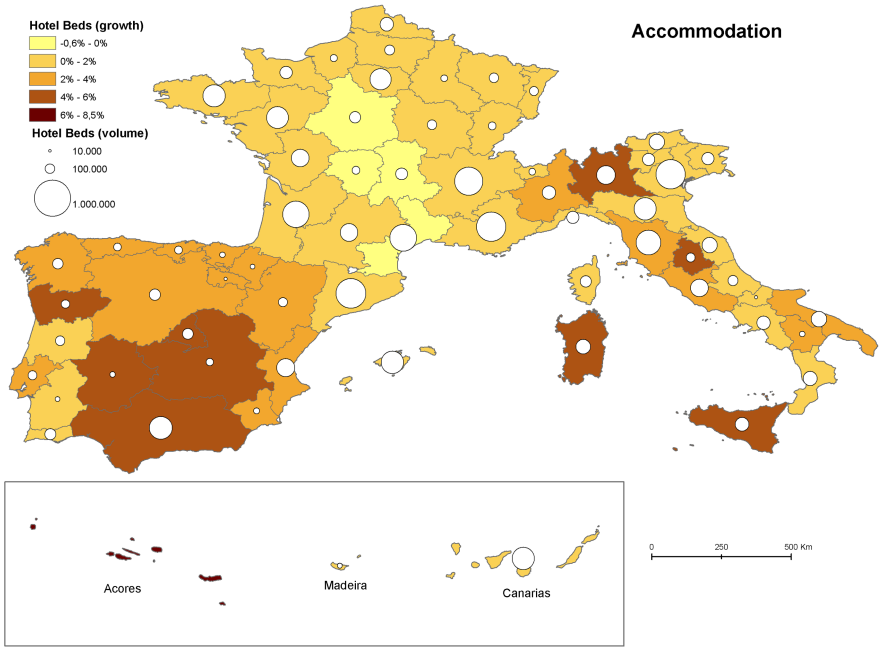


This group of variables also includes data on infrastructures related to tourism. One of them is the existence, at the regional level, of an international airport, which has revealed, as expected, a positive correlation with the regional tourism demand (although it is also possible that one region, even if it does not include an airport in its territory, has an easy accessibility to an airport in another region). For this purpose, airports with at least 5.000 international flights per year were taken into consideration (and for the airports in this group, the specific number of flights or arrivals has not been considered). It was possible to observe that only 13 regions among the 67 under analysis did not have an international airport within their territory:

- 3 in Spain (La Rioja, Castilla-la-Mancha and Extremadura);
- 3 in France (Champagne-Ardenne, Framche-Comte and Limousin);
- 7 in Italy (Valle d'Aosta / Vallée d'Aoste, Trento, Umbria, Abruzzo, Molise, Basilicata and Calabria);
- 2 in Portugal (Centro and Alentejo).

The other infrastructure considered in this model is the regional supply of accommodation, measured by the number of beds available in hotels and restaurants, which has been found, as expected, positively related with the regional tourism demand. The following map (Figure 10) shows the regional supply of accommodation in hotels and similar establishments in volume for 2008 and its growth rate between 2003 and 2008.

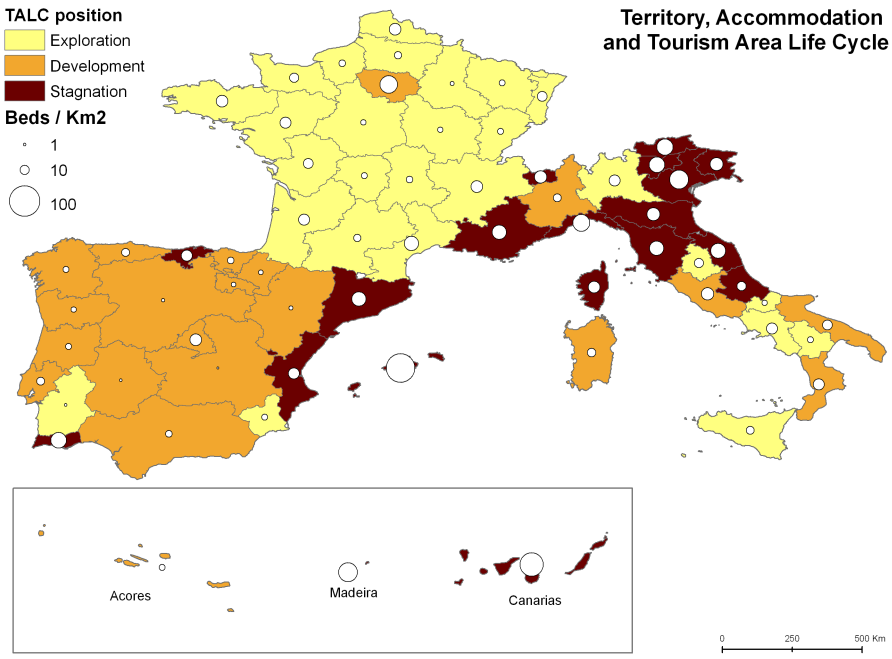
Figure 10: Beds in Hotels and similar establishment



It is possible to observe a high growth of the supply of accommodation in the Spanish regions (and some Italian regions), even in territories where the number of beds in hotels was already very high, which can imply, in the long run, an extreme pressure for urbanization and degradation of the natural conditions of tourism destinations.

This question can also be observed in the following map (Figure 11), which shows the number of beds per m^2 of the regional territory and the position of each region in the Tourism Area Life Cycle.

Figure 11: Accommodation, Territory and Life-Cycle



3.2.4. INDEPENDENT VARIABLES – DUMMY VARIABLES

As previously indicated, two dummy variables were included in the panel data model, in order to differentiate them according to some relevant characteristics for tourism development.

One of these variables is related to the regional geographical situation, creating a difference between the regions in the south coast (more exposed to "sun and sea" tourism, due to their proximity of the Mediterranean Sea), the west coast (close to the Atlantic Sea, less exposed to massive flows of "sun and sea" tourism") and regions without contact with the coast (inland), which develop other tourism products and services.

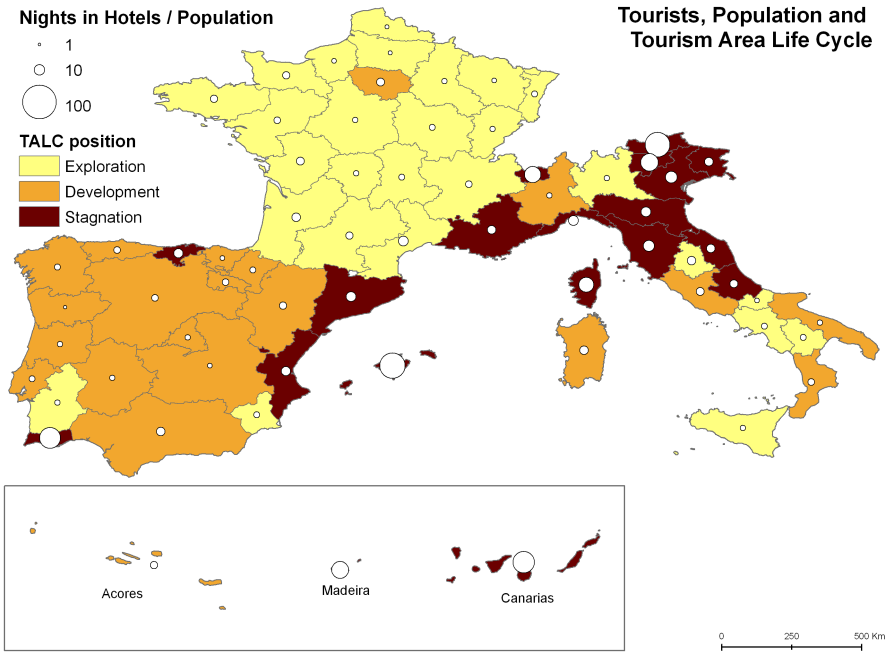
The second dummy variable used relates to the historical process of regional tourism development and the position of each region in the Tourism Area Life Cycle, following the methodology presented before. It was observed that:

- 50% of the inland regions are in exploration;
- 56% of the west coast regions are in exploration;
- 52% of the south coast regions are in stagnation;
- 74% of the regions in stagnation are in the south coast.

The following map (Figure 12) shows the position of each region in the Tourism Area Life Cycle and the number of nights spent in their hotels and similar

establishments in relation to the local population. It is possible to observe that most regions in the "Stagnation" stage registered a high volume of nights spent in their hotels and similar establishments, clearly exposing their limits for the growth in the number of visitors and suggesting the importance of developing innovative products.

Figure 12: Tourists, Population and Life-Cycle



4. CONCLUSIONS AND DISCUSSION

The final part of this work includes a systematization of the analysis taking into consideration the general aim to establish a link between the factors that contribute to the competitiveness of tourism destinations, their differentiation based on natural and cultural resources through innovative activities and their sustainability in the long run.

In the first part (chapter 4.1), the general conclusions arising from the results of the panel data model and literature review will be presented. From these conclusions, some policy recommendations regarding tourism development will be put forward.

In the second part (chapter 4.2), the problems and limits of this research project will be discussed, allowing the identification of possible developments of this work.

4.1. CONCLUSIONS AND POLICY IMPLICATIONS

The general conclusions of this work include the analysis of the results obtained with the computation of the panel data model, linking the concepts of competitiveness, innovation, differentiation and sustainability of tourism development and taking into consideration the specific position of each region in the Tourism Area Life-Cycle (chapter 4.1.1).

From these conclusions it is possible to identify some policy implications and propose a group of recommendations related to the planning processes of tourism development (chapter 4.1.2).

4.1.1. RESULTS AND CONCLUSIONS

The hypothesis to be tested in this work is whether the development of innovative tourism products and services based on the local natural and cultural resources has a decisive contribution to the differentiation of tourism destinations (and then for their competitiveness), assuming that an adequate management of these resources, that ensures their preservation in the long run, can also contribute for the regional sustainable development of tourism.

In fact, putting natural and cultural resources in the center of the strategies for tourism development is the path to achieve a differentiation of the destination (if innovative products and services are developed) and its sustainability (if an adequate management of these resources is promoted).

The most important conclusion arising from this study is that the factors of competitiveness related to the differentiation (innovation) and sustainability (natural and cultural resources) of tourism destinations taken into consideration have a clear positive impact on their competitiveness.

In fact, it was possible to observe 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 tourism 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 their tourism products, taking into consideration target markets but also the past evolution of each destination, which is a particularly relevant aspect in regions in the later stages of the life-cycle of the tourism 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).

The results of the model also confirmed the expected positive correlation between regional tourism competitiveness and the economic conditions taken into consideration as "traditional factors of competitiveness": regional investments in hotels and restaurants in the previous year and the availability of infrastructures (both accommodation in hotels and similar establishments and existence of international airports).

It is also important to stress that the negative relation found between tourism demand and the evolution of national GDP can be seen as a sign of the lower importance of tourism activities in more developed countries. In this case, it must be considered that France has a much more industrialized and developed economy than the other countries in the study. This conclusion implies that the national GDP is not a good indicator for the evolution of the domestic tourism market.

Finally, as the model includes dummy variables, it was possible to identify different overall impacts of the independent variables on the regional tourism demand in each group. Generally, the observed impacts are higher in the South Coast regions and lower in the West Coast. Nevertheless, the choice of NUTS 2 regions as the unit of analysis can hide some possible intra-regional differences,

eventually related to different positions in the life cycles of tourism products and services inside the same region.

With the application of the TALC model to the regions of Southwest Europe it was possible to observe large differences between the regions that are exposed to the "sun and sea" tourism and the others: 50% of the inland regions and 56% of the west coast regions were classified in the "exploration" stage, while 52% of the south coast regions are in the "stagnation" stage (also meaning that 74% of the regions in stagnation are in the south coast), which exposes the limits of tourism development and implies different policy recommendations.

In fact, the results obtained when the number of tourists is related with local population or the number of beds in hotels is related with the dimension of the territories, clearly show that the regions are reaching a limit in their tourism attractiveness and infra structures, which can affect their sustainability, as a consequence of the excessive usage of resources and potential negative impacts in the quality of life of local populations. Consequently, the "positioning" (or "repositioning") strategies of touristic destinations are a particularly relevant aspect in regions in the later stages of the life-cycle of tourism products.

4.1.2. POLICY IMPLICATIONS

The differentiation of tourism destinations based on local natural and cultural resources integrated in the regional tourism supply through innovative activities that contribute to competitiveness and long-term sustainability implies an active process of planning, institutional coordination and involvement of local stakeholders.

The development of innovative products and services related to nature and cultural heritage requires an adequate development and promotion, creating the necessary conditions for these new elements of tourism supply to be recognized by potential visitors.

In order to reach these potential costumers, information technologies, multimedia presentations, internet and mobile devices can be extremely useful in order to provide the necessary information. On the other hand, it is also necessary to identify strategic markets that are potentially most interested in these products, in order to organize the promotional strategies according to them.

The sensitiveness of these natural and cultural resources must also be taken into consideration, which implies an adequate estimation of their carrying capacity and, according to these limits, the creation of infrastructures that guarantee an easy and safe access to these resources.

In order to prevent excessive commodification of local resources, ensuring that local populations have full access to their own natural and cultural resources and that local cultural values will be preserved, independently of their tourism attractiveness, local stakeholders must be directly involved in the processes of planning tourism development.

Consequently, the implementation of tourism development policies that attempt to reach these objectives requires a significant effort of coordination of different management institutions, namely those related to economic development, promotion of innovation, tourism destination management, environmental protection and management or cultural management. In order to ensure that these processes effectively benefit local populations, local stakeholders should necessarily be involved.

According to these principles, the institutional coordination is a major challenge for tourism development based on local and natural assets, taking into consideration the need to involve a large set of private companies and public entities, frequently with different perspectives and objectives, in the processes of tourism development planning. Nevertheless, this involvement is a necessary condition to combine competitiveness with long term sustainability of tourism destinations.

Finally, it is important to notice the policy implications of the life-cycle position of each destination:

- for destinations in the earlier stages (exploration), it is important to create adequate infrastructures, develop new services, guarantee a good level of qualifications of the workers (namely with knowledge of different languages), identify potential markets and implement adequate promotional strategies; sustainable development and long-term advantages will be easier to reach if carrying capacity of local resources is taken into consideration since the beginning (with an adequate process of land-use planning), the involvement of local stakeholders is ensured and institutional coordination is promoted; increasing the number of visitors is often necessary in order to guarantee the existence of relevant and diversified tourism products and services;

- for the regions in the "development" stage, it is important to control the excessive pressure on the territory resulting from potential excessive demand (at least in some periods of the year), develop alternative products and services in order to avoid seasonality and try to improve the quality of the experience offered by the destination, through an improvement of the products and services locally provided; increasing value added in local supply becomes more important than increasing the number of visitors;

- for the regions in the late stages of the life-cycle ("stagnation"), the priorities should be the repositioning of tourism supply, creating and promoting new products and services, based on new approaches to local

specific resources; in this stage, new products or new markets are essential for tourism development but, considering the extreme global competition among tourism destinations, it is also important that those local resources have not been previously destroyed by an excessive usage in previous stages.

4.2. DISCUSSION

This final part includes an identification and discussion of the problems and limits of this analysis, taking into consideration the methodology, variables and data that have been used (chapter 4.2.1).

Finally, some suggestions for further developments of this work or other applications of these methodologies will be presented, considering the problems and limits that were identified (chapter 4.2.2).

4.2.1. PROBLEMS AND LIMITS

As mentioned before, a relevant problem in the analysis of tourism destinations is the choice of the territorial unit: in fact, using NUTS 2 regions as the unit of analysis can hide potential intra-regional differences related to different tourism products developed inside the same region, probably with different positions in their life cycles. A different scale of analysis, like the NUTS 3 regions, could help improve the precision of the results, but imposes important restrictions on the data that can be used.

The difficulties to obtain relevant and comparable statistical data also imposed some restrictions on the application of the Tourism Area Life Cycle model, implying the usage of a simplified version of this tool, which focused only on three main stages and not taking into consideration the last (rejuvenation or decline) possible stages of the cycle. A longer period of analysis (or the comparison between tourism development in different decades) could allow a more precise identification of the stage of each region (and a more precise evaluation of the changes in the preferences of tourists).

Aspects like the resident's perceptions about tourism development can be useful in this context but extremely difficult to consider, due to the extreme difficulties to obtain relevant comparable data. Nevertheless, the participation of local stakeholders (including residents and their organizations) in the planning and monitoring processes of tourism development can be extremely useful in order to

identify potentially negative effects of tourism on local communities that contribute, not only to the degradation of their quality of live, but also to the degradation of tourism supply. Regular surveys on the resident's perception of tourism impacts can also be extremely useful tools to obtain this information.

It is also important to notice that cultural and natural assets were used as available resources and not as tourism products. This limitation is also related with the absence of data and imposes some restrictions on the analysis of the contribution of these local specific resources to the evolution of tourism demand.

For the same reasons, questions related to the carrying capacity of the places, the limits of usage of local resources (namely those related to the degradation of natural resources) or the commodification of natural and cultural assets were also not taken into consideration, although they are extremely important in order to plan the processes of regional tourism development and evaluate the impacts of tourism activities on local communities. The involvement of local stakeholders in the strategic planning and management of tourism destinations has not been considered, as well.

Other aspects of sustainability, namely those related to social sustainability and the spreading of benefits resulting from tourism development among local communities were also not included in the model. Nevertheless, questions linked to revenues or quantity and quality of employment generated by tourism have

clear impact on the attitudes of local populations towards tourism and tourists, as is shown in many examples in tourism literature.

Regarding the analysis of differentiation of tourism destinations, the process of innovation itself had a very simplified approach. Although the variable that was used as a proxy to regional dynamics of innovation showed interesting results, the study of the interactions between the regional innovation system and the regional tourism systems requires a more detailed observation, which is extremely difficult taking into consideration the available data.

Aspects that related to prices (which have a very important component, related to transports, which is defined at the international level) and markets (origins and characteristics of visitors) were also not included in the model, implying an important loss in its ability to predict future evolution of regional tourism demand. In fact, even the variables used as a proxy for the dynamics of the main markets showed a negative correlation with tourism demand (national GDP) or no correlation at all (GDP at EU15 level).

Questions related to destination management and promotion, institutional organization or involvement of local communities in the process of tourism development were not considered either, again as a result of the difficulty to collect relevant and comparable information.

Finally, it is also important to notice that the fact that this analysis does not show a significant impact of the evolution of demand in rival destinations, it does not mean that these impacts can not occur in the future.

Despite these limitations, the model allowed the identification of an important relation between regional tourism attractiveness, natural or cultural resources and regional efforts on innovation, suggesting that this methodology can be applied in other contexts as well.

4.2.2. FURTHER DEVELOPMENTS

As mentioned earlier, the choice of the NUTS 2 regions as the unit of analysis can hide some possible intra-regional differences related to different tourism products developed inside the same region, eventually with different positions in their life cycles. Further developments of this work can include a shift in the scale of analysis, for example using data for NUTS 3 regions, which would allow for a more detailed observation. Nevertheless, this option can also imply an important reduction of the available information on the relevant topics.

This study took into consideration a period of six years, ending in 2008. After that, an important international economic crisis with deep implications on the revenues and the behavior of consumers at the global level occurred, with relevant negative impacts on tourism, which is a luxurious activity, very sensitive to fluctuations in revenues and prices.

Although the good results obtained with this model suggest the possibility of enlarging the number of regions and periods under analysis, including the most recent years, a new approach should be revised, in order to contribute to identify different impacts of the international economic crisis on tourism destinations and to compare the evolution of the attractiveness in tourism regions with different characteristics: countries with similar climate and cultural conditions are considered in this work but it could be interesting to include regions from other European countries, with completely different tourism products.

On the other hand, it is important to include some explanatory variables that can measure the relative importance of each market for each destination and their specific evolution in the context of this economic crisis and recovery. In this sense, it is important to identify the main issuing markets to each destination, the changes in their importance over time, their dynamics and the impacts of this evolution on tourism demand in each region.

In the same sense, it may be important to include in the model information related to production costs, although there is a very relevant part of tourism expenses which is not controlled at the regional level (the costs of international transport).

The consideration of other aspects that can influence the performance of tourism destinations, namely those related to destination management and promotion, institutional organization or involvement of local communities in the process of tourism development can also allow for a more comprehensive perspective of the competitiveness and sustainability of tourism destinations, increasing the ability of the model to predict the evolution of regional tourism demand. Nevertheless, this kind of information will be extremely difficult to collect and compare.

Questions related to sustainability can also be observed in more detail: in this case, cultural and natural assets were taken into consideration as locally available resources but it would surely be more interesting to evaluate them as tourism products, which is extremely difficult at an international basis (for example, the

Doñana Park, in Andalucia, is a tourism product, with organized visits and requiring the payment of a ticket, while the Natural Parks in Algarve are not exploited as tourism products, although they are available for non-organized and free visits). Anyway, although it is not easy to obtain comparable relevant data, it is important to evaluate how these resources are effectively used by tourists and then if they are effective determinants for regional competitiveness.

Questions related to carrying capacity and the possible excessive usage of natural resources or commodification of cultural community values were also not taken in consideration and should be important elements to consider in other works, once they potentially impose some degradation of natural resources or excessive commodification of cultural traditions.

On the other hand, it is also possible to consider other information related to the pressure of tourism development on local territories, such as the evolution of urbanized areas or the forest areas. Other elements like the consumption of water or the levels of recycling can also be important indicators of the sustainability of tourism development, despite the difficulties to distinguish the effects of residents and tourists.

On the other hand, questions related to "social sustainability" or the spreading of benefits to local communities were not considered either. Indicators like the regional employment in tourism activities, stability of jobs (permanent work, instead of temporary or seasonal work) or wages can be considered in the future.

In fact, a major improvement in this study could be the analysis of the impacts of tourism development on regional economy and society, including information about regional employment, value added or income.

The regional processes of innovation can also be analyses in more detail, in order to try to identify the regional dynamics of innovation specifically in the tourism sector, namely when it is related to the usage of communication and information technologies or the capacity to produce new technological solutions for tourism (considering the number of registered patents or other indicators) and their impacts on regional tourism competitiveness.

On the other hand, other indicators for tourism development, namely those related with the resident's perceptions about this phenomena, could be included in order to identify the position of each region in the Tourism Area Life Cycle model. It could also be interesting to include more detailed information about the last stages of the model (rejuvenation or decline), which implies the consideration of longer periods.

Other statistical tools and methodologies could be applied to this king of study, such as Simultaneous Equation Models, which also allow the use of qualitative data. A possible and important advantage of these tools could be the achievement of more detailed information about the impacts of each determinant of regional competitiveness in each specific territory.

Finally, these results can also be developed in order to obtain a more accurate analyze the impact of tourism performance on regional development and sustainability.

It seems possible to conclude that the model developed in this work allowed the identification of an important relation between competitiveness, innovation, differentiation and sustainability, but it is still possible to improve its territorial accuracy, its ability to predict the evolution of regional tourism demand and to include a larger set or relevant elements that contribute to regional tourism competitiveness and sustainability.

In fact, the major concern of this study – to analyze the competitiveness and sustainability of tourism development at regional level, with clear implications on the processes and methods of governance – are clearly in line with the concerns and guidelines recently expressed by UNWTO (2011) regarding tourism development.

In this sense, the objects and methodologies used in this work seem to be an interesting tool in order to develop this study in order to have more detailed information about the relation between regional competitiveness, sustainable development, impacts on climate change and development of adequate governance methods.

REFERENCES

Adorno, T. and Rabinbach, A. (1975) Culture Industry Reconsidered, *New German Critique*, 6: 12-19

Agarwal, S. (1997) The resort cycle and seaside tourism: an assessment of its applicability and validity, *Tourism Management*, 18, 2: 65-73

Agarwal, S. (2006) Coastal resort restructuring and the TALC, in: R.W. Butler (Ed.), *The Tourism Area Life Cycle: Conceptual Theoretical Issues*, Channelview Publications: 201–218

Aldebert, B., Dang, R. and Longhi, C. (2011) Innovation in the tourism industry: The case of Tourism@, Tourism Management, 32, 1204-1213

Alvarez, M and Yarcan, Y. (2009) Culture, Tourism and Business in Istanbul: the Case of a World City, *4th International Scientific Conference - Contemporary Developments in Tourism, Travel and Hospitality*, Rhodes, Greece

Amin, A. (1994) The Difficult Transition from Informal Economy to Marshallian Industrial District, *Area*, 26, 1: 13-24

Andraz, J., Gouveia, P. and Rodrigues, P. (2009) Modelling and Forecasting Tourism Growth Cycle, *Tourism Economics*, 15(2), 323-338

Aramberri, J. (2009), The future of tourism and globalization: Some critical remarks, *Futures*, 41, 367–376

Arellano, M. and Bond, S. (1991) Some Tests of Specification for Panel Data: Monte Carlo Evidence and an Application to Employment Equations, *Review of Economic Studies*, 58, 277-297

Asheim, B. (1996), Industrial districts as “learning regions”: A condition for prosperity, *European Planning Studies,* 4, 4: 379

Asheim, B. (2002), Temporary Organisations and Spatial Embeddedness of Learning and Knowledge Creation, *Geografiska Annaler. Series B, Human Geography,* 84, 2, Special Issue: Beyond "Happy Communities" in Economic Geography: 111-124

Asheim, B. (2007), Differentiated Knowledge Bases and Varieties of Regional Innovation Systems, *Innovation*, Vol. 20, No. 3

Asheim, B. et al (ed) (2006) *Clusters and Regional Development*, Routledge, New York

Asheim, B. et al (2007), Face-to-face, Buzz and Knowledge Bases: Sociospatial Implications for Learning, Innovation, and Innovation Policy, *Environment and Planning: Government and Policy*, 25: 655 – 670

Asheim, B. and Coenen, L. (2006), Contextualising Regional Innovation Systems in a Globalising Learning Economy: On Knowledge Bases and Institutional Frameworks, *Journal of Technology Transfer*, 31: 163–173, 2006.

Asheim, B. and Isaksen, A. (1997), Location, agglomeration and innovation: Towards regional innovation systems in Norway ?, *European Planning Studies,* 5, 3

Ashworth, G. (2009) Heritage Tourism - Current Resource for Conflict, *Annals of Tourism Researc*h, 36, 3: 522–525

Ashworth, G., Page, S. (2011), Urban tourism research: Recent progress and current paradoxes, *Tourism Management* 32 (2011) 1–15

Avdimiotis, S. (2009) From Development to Decline. Tracing the Life Circle Notifications of a Destination, *Journal of Environmental Protection and Ecology*, 10, 4: 1205-1217

Balassa B. (1989), *Comparative advantage, trade policy and economic development*, Hasvester Wheatsheaf, Hestfordshire, 18-79

Baltagi, B (2006) Forecasting with panel data, Discussion Paper Series 1, *Economic Studies*, No 25/2006, Deutsche Bundesbank

Baltagi, B, et al (2006), Joint LM test for homoskedasticity in a one-way error component model, *Journal of Econometrics*, 134: 401–417

Baltagi, B et al (2007) Testing for serial correlation, spatial autocorrelation and random effects using panel data, *Journal of Econometrics*, 140: 5–51

Baltagi, B. et al (2010) Testing for heteroskedasticity and serial correlation in a random effects panel data model, *Journal of Econometrics*, 154: 122–124

Baltagi, B. and Pesaran, M (2007) Heterogeneity and Cross Section Dependence in Panel Data Models: Theory and Applications, J*ournal of Applied Econometrics* 22: 229–232

Bandarin, F. (2005) Foreword, in Harrison, D. and Hitchcock, M. (ed) *The Politics of World Heritage: Negotiating Tourism and Conservation*, Channel View Publications, Clevelon

Baptista, R. (2000) Do innovations diffuse faster within geographical clusters?, *International Journal of Industrial Organization*, 18: 515–535

Baptista, R. (2001) Geographical Clusters and Innovation Diffusion, *Technological Forecasting and Social Chang*e, 66: 31–46

Barclay, E. (2004) Greening Cuba: The Island's new Environmentalism facing challenges, *E Magazine*, May/June

Barré, H. (1995) Culture , Tourism, Development: Crucial Issues for the Twenty-First Century, *Annals of Tourism Research*, 30, 2: 586-599

Barro, J. (1991) Economic Growth in a Cross Section of Countries, *The Quarterly Journal of Economics*, 106, 2: 407-443

Baum, T. (2006) Revisiting the TALC: is there an off-ramp? in: R.W. Butler (Ed.), *The Tourism Area Life Cycle: Conceptual and Theoretical Issues*, Channelview Publications, Clevedon: 219–230

Beccatini, G. (2002) Industrial Sectors and Industrial Districts: Tools for Industrial Analysis, *European Planning Studies*,10, 4

Bernini, C. (2009), Convention industry and destination clusters: Evidence from Italy, *Tourism Management* 30: 878–889

Berry, T. (2006) The predictive potential of the TALC model, in Butler, R. (ed) *The Tourism Area Life Cycle: Applications and modifications*, Channel View Publications, New York

Bhattacharyya, A. and Hodler, R. (2010) Natural resources, democracy and corruption, *European Economic Review*, 54: 608–621

Blancas, F. et al (2010) The assessment of sustainable tourism: Application to Spanish coastal destinations, *Ecological Indicators*, 10: 484–492

Bonhama, C. et al (2009), Modeling tourism: A fully identified VECM approach, *International Journal of Forecasting*, 25: 531-549

Boniface, P. (2002), Information Technology, Tourism and Biodiversity - in Society and in Relationship, in Di Castri et al (ed), *Tourism, Biodiversity and Information*, pp 431-448, Backhuys Publishers, Leiden

Borg, J. et al (1996) Tourism in European Heritage Cities, *Annals of Tourism Research*, 23, 2: 306-321

Boschma, R. and Martin, R. (2007) Editorial: Constructing an evolutionary economic geography, *Journal of Economic Geography*, 7: 537–548

Bougeant, P. (2002), Mediterranean Tourism: Towards a New Deal, in Di Castri et al (ed), *Tourism, Biodiversity and Information*, pp 66-74, Backhuys Publishers, Leiden

Boyd, S. (2006) The TALC Model and its application to Natural Parks: a Canadian Example, in Butler, R. (ed) *The Tourism Area Life Cycle: Applications and modifications*, Channel View Publications, New York

Breidenbach, J. and Nyíri, P. (2007) "Our Common Heritage": New Tourist Nations, Post-"Socialist" Pedagogy, and the Globalization of Nature, *Current Anthropology*, 48, 2

Bristow, G. (2005) Everyone is a winner: Problematizing the discourse of regional competitiveness, *Journal of Economic Geography*, 5: 285–304

Bristow, G. (2010) Resilient regions: re-'place'ing regional competitiveness, *Cambridge Journal of Regions, Economy and Society*, 3: 153–167

Britton, S. (1982) The Political Economy of Tourism in the Third World, *Annals of Tourism Research*, 9, 331-358

Brooker, E. and Burgess, J. (2008) Marketing destination Niagara effectively through the tourism life cycle, *International Journal of Contemporary Hospitality Management*, 20, 3: 278-292

Bryant, M. (2009) Counter-Intuitive Innovation, *Modernism/modernity*, 16, 3: 482-484

Budeanu, A. (2009) Environmental supply chain management in tourism: The case of large tour operators, *Journal of Cleaner Production*, 17: 1385–1392

Buhalis, D. (1999) Limits of tourism development in peripheral destinations: problems and challenges, *Tourism Management*, 20: 183—185

Buhalis, D. (2000), Marketing the competitive destination of the future, *Tourism Management,* 21: 97-116

Buhalis, D. and Law, R. (2008) Progress in information technology and tourism management: 20 years on and 10 years after the Internet - The state of eTourism research, *Tourism Management* 29, 609–623

Buhalis, D. et al (2001), The future role of the travel e-mediaries, ENTER2001 Conference, Montreal, Canada.

Butler, R. (1980) The Concept of a Tourism Area Life Cycle of Evolution: Implications for Management of Resources. *Canadian Geographer,* 24, 1: 5–12

Butler, R. (2009) Tourism in the future: Cycles, waves or wheels?, *Futures* 41: 346–352

Buultjens, J. et al (2010) Synergies between Australian indigenous tourism and ecotourism: possibilities and problems for future development, *Journal of Sustainable Tourism*, 18, 4: 497–513

Capone, F. and Boix, R. (2007), *Sources of growth and competitiveness of local tourist production systems: an application to Italy (1991 - 2001)*, Springer-Verlag, Belin

Casais, E. (2002), Sociedade do betão ou sociedade da informação?, *Cadernos de Economia*, Ano XV, 58

Castells, M. (1992) European Cities, the informational society and the global economy, http://www.acturban.org/biennial/doc_planners/castells_european_informational_society_global_economy.htm

Castells, M. (2002) Local and Global: Cities in the Network Society, *Tijdschrift voor Economische en Sociale Geografie*, 93, 5: 548–558

Celant, A. (2007) *Global Tourism and Regional Competitiveness*, Patron, Bologna

Chambers, D. (2007) An Agenda for Cutting-Edge Research in Tourism, in Tribe, J. and Airey, D. (eds) *Developments in Tourism Research*, Elsevier, Oxford

Chambers, E. (2010) From authenticity to significance: Tourism on the frontier of culture and place, *Futures*, 41: 353–359

Chang, C. et al (2009) Modeling and forecasting tourism from East Asia to Thailand under temporal and spatial aggregation, *Mathematics and Computers in Simulation*, 79: 1730-1744

Chang, G. and Caneday, L. (2011) Web-based GIS in tourism information search: Perceptions, tasks, and trip attributes, *Tourism Management*, 32: 1435 -1437

Chen, D. (2009), Innovation of Tourism Supply Chain Management, *International Conference of e-Commerce and e-Government*

Chen, M. et al (2010) Forecasting tourist arrivals by using the adaptive network-based fuzzy inference system, *Expert Systems with Applications*, 37: 1185-1191

Choi, H. and Murray, I. (2010) Resident attitudes toward sustainable community tourism, *Journal of Sustainable Tourism*, 18, 4: 575–594

Choong-Ki, L. (1997) Valuation of nature-based tourism resources using dichotomous choice contingent valuation method, *Tourism Management*, 18, 8: 587-591

Chu, F. (2008) A fractionally integrated autoregressive moving average approach to forecasting tourism demand, *Tourism Management*, 29: 79–88

Chu, F. (2009) Forecasting tourism demand with ARMA-based methods, *Tourism Management*, 30: 740–751

Clark, J. et al (2010) A typology of 'innovation districts': what it means for regional resilience, *Cambridge Journal of Regions, Economy and Society*, 3: 121–137

Coccossis, H. (2002) Tourism Development and Carrying Capacity, in Apostoulos, G. and Gayle, D. (Eds), *Island Tourism and Sustainable Development*: 131-144, Praeger, Westport, Connecticut

Cohen, E. (1972) Towards a sociology of international tourism, *Social research*, 39, pp. 164-182

Cole, A. (2009) Introduction: Tourism as future, *Futures*, 41: 335–345

Cole, S. (2009) A Logistic Tourism Model: Resort Cycles, Globalization, and Chaos, *Annals of Tourism Research*, 36, 4: 689–714

Cole, S. and Razak, V. (2009) How far, and how fast? Population, culture, and carrying capacity in Aruba, *Futures*, 41: 414–425

Convention on Biological Diversity (2004**)** *Guidelines on Biodiversity and Tourism Development*

Cooke, P (2004a) The Role of Research in Regional Innovation Systems: New Models Meeting Knowledge Economy Demand*, International Journal of Technology Management,* 28: 507-533

Cooke, P (2004b) Regional innovation systems – an evolutionary approach, in Cooke, P., Heindenreich, M. and Braczik, H. (ed) *Regional Innovation Systems,* Routledge

Cooke, P. (2005) Regionally asymmetric knowledge capabilities and open innovation Exploring 'Globalisation 2'—A new model of industry organization, *Research Policy,* 34: 1128–1149

Cooke, P. (2007) To Construct Regional Advantage from Innovation Systems First Build Policy Platforms, *European Planning Studies*, 15, 2

Cooke, P. et al (1997) Regional innovation systems: Institutional and organizational dimensions, *Research Policy*, 26: 475-491

Cooke, P. et al (2005) Social Capital, Firm Embeddedness and Regional Development, *Regional Studies*, 39, 8: 1065–1077

Cooke, P. and Memedovic, O. (2003) *Strategies for Regional Innovation Systems*, United Nations Industrial Development Organization, Vienna

Cooper, C. (2006) Knowledge Management and Tourism, *Annals of Tourism Research*, 38, 1, 47-64

Correani, L. and Garofalo, G. (2008) Chaos in the tourism industry, *Munich Personal RePEc Archive,* Paper No. 9677

Cortés-Jiménez, I. (2008) Which Type of Tourism Matters to the Regional Economic Growth? The Cases of Spain and Italy, *International Journal of Tourism Research*, 10: 127–139

Crabbe, M. et al (2010) Is Capacity Building Important in Policy Development for Sustainability? A Case Study Using Action Plans for Sustainable Marine Protected Areas in Belize, *Society and Natural Resources*, 23, 2: 181 – 190

Cracolici, M., Nijkamp, P. and Cuffaro, M. (2007) Efficiency and Productivity of Italian Tourist Destinations: A Quantitative Estimation Based on Data Envelopment Analysis and the Malmquist Method, in Matias, A., Nijkamp, P. and Neto, P. (ed) *Advances in Modern Tourism Research*, Physica-Verlag, New York

Croissant, Y. And Millo, G. (2008) Panel Data Econometrics in R: The plm Package, *Journal of Statistical Software*, 27, 2

Daniel, A. C. and Ramos, F (2002) Modelling Inbound International Tourism Demand to Portugal, *International Journal of Tourism Research*, 4, 193-209

Darcy, S. et al (2010) Accessible tourism and sustainability: a discussion and case study, *Journal of Sustainable Tourism*, 18, 4: 515–537

Daskalopoulou, I. and Petrou, A. (2009) Urban Tourism Competitiveness: Networks and the Regional Asset Base, *Urban Studies,* 46: 779

David, P. (2001) Path dependence, its critics and the quest for 'historical economics'**,** *in* Garrouste, P. and Ioannides, S. (eds) *Evolution and Path Dependence in Economic Ideas: Past and Present*: 15-36 Edward. Elgar Publishing, Cheltenham, England.

David, P. and Foray, D. (2003), Economic Fundamentals of the Knowledge Society (2003), *Policy Futures In Education, Special Issue: Education and the Knowledge*

Daye, M. (2010), Challenges and Prospects of Differentiating Destination Brands: the Case of the Dutch Caribbean Islands, *Journal of Travel and Tourism Marketing*, 27: 1-30

De Camillis, C. et al (2010) Tourism LCA: state-of-the-art and perspectives, *International Journal Life Cycle Assess* ,15: 148–155

Di Castri, F. (2002), The trilogy of the knowledge-based, post-industrial society: Information, Biodiversity and Tourism, in Di Castri et al (ed), *Tourism, Biodiversity and Information*, pp 7-24, Backhuys Publishers, Leiden

Diedrich, A and García-Buades, E. (2008) Local perceptions of tourism as indicators of destination decline, *Tourism Management* 30: 512–521

Divino, J. and McAleer, M. (2009) Modeling sustainable international tourism demand to the Brazilian Amazon, *Environmental Modeling & Software* 24: 1411–1419

Dodds, R. (2010) Does the tourist care? A comparison of tourists in Koh Phi Phi, Thailand and Gili Trawangan, *Indonesia, Journal of Sustainable Tourism*, 18, 2: 207–222

Dolnicar, S. et al (2010) Short-haul city travel is truly environmentally sustainable?, *Tourism Management*, 31: 05–512

Doxey, G. (1976) When Enough's Enough: The Natives are Restless in Old Niagara, *Heritage Canada*, 2: 26-27

Dwyer, L., Forsyth, P. and Rao, P. (2000) The price competitiveness of travel and tourism: a comparison of 19 destinations, *Tourism Management* 21: 9 – 22

Dwyer, L., Forsyth, P. and Rao, P. (2002) Destination Price Competitiveness: Exchange Rate Changes versus Domestic Inflation, *Journal of Travel Research,* 40: 328

Dwyer, L. and Kim, C. (2003) Destination Competitiveness: Determinants and Indicators, *Current Issues in Tourism*, 6, 5

Dwyer, L., Forsyth, P. and Spurr, R. (2005), Estimating the Impacts of Special Events on an Economy, *Journal of Travel Research*, 43: 351

Elhorst, J. (2003) Specification and estimation of Panel Data Models, *International Regional Science Review* 26, 3: 244–268

Englin, J. et al (1997) A Structural Equations Approach to Modeling Consumptive Recreation Demand, *Journal of Environmental Economics and Management*, 33, 43

Englin, J. and Shonkwiler, J. (1995) Modeling Recreation Demand in the Presence of Unobservable Travel Costs: Toward a Travel Price Model, *Journal of Environmental Economics and Management,* 29, 3: 368 - 377

Enright, M. and Newton, J. (2004) Tourism destination competitiveness: a quantitative approach, *Tourism Management,* 25, 777–788

Enright, M. and Newton, J. (2005) Determinants of Tourism Destination Competitiveness in Asia Pacific: Comprehensiveness and Universality, *Journal of Travel Research,* 43; 339

Erkus-Ozturk, H. and Eraydın, A. (2010) Environmental governance for sustainable tourism development: Collaborative networks and organisation building in the Antalya tourism region, *Tourism Management*, 31: 113–124

Erkus-Ozturk, H. (2008) The role of cluster types and firm size in designing the level of network relations: The experience of the Antalya tourism region, *Tourism Management*, 30

Eugenio-Martín, Morales, N. and Scarpa, R. (2004), Tourism and Economic Growth in Latin American Countries: A Panel Data Approach, *Nota di Lavoro*, 26.2004, Fondazione Eni Enrico Mattei

Europark Federation (2005) *Principles for Sustainable Tourism in Protected Areas*

European Commission (2002) *Early warning system for identifying declining tourist destinations, and preventive best practices*, Brussels

European Commission (2003a) *Basic orientations for the sustainability of European tourism*, Luxembourg

European Commission (2003b) *Structure, performance and competitiveness of European tourism and its enterprises*, Brussels

European Commission (2004) *Early warning system for identifying declining tourist destinations, and preventive best practices*, Luxembourg

European Commission (2006a), *A renewed EU Tourism Policy: Towards a stronger partnership for European Tourism*, Luxembourg

European Commission (2006b), *Innovating in Tourism: How to create a tourism learning area*, Luxembourg

European Commission (2007a) *Agenda for a Sustainable and Competitive European Tourism*, Luxembourg

European Commission (2007b), *Plano de Acção para um Turismo Europeu Mais Sustentável*, Luxembourg

European Commission (2007c), *The European Tourism Industry in the Enlarged Community: Gaps Are Potencials and Opportunities*, Luxembourg

European Commission (2009) *Study on the Competitiveness of the EU tourism industry,* Brussels

European Commission (2010) Tourism: Keeping Europe the Worlds's top Destination, *Memo/10/289*, Brussels

Evans, G. (2005) Mundo Maya: from Cancún to City of Culture. World Heritage in Post-colonial Mesoamerica, in Harrison, D. and Hitchcock, M. (ed) *The Politics of World Heritage: Negotiating Tourism and Conservation*, Channel View Publications, Clevelon

Ezebilo, E. and Mattsson, L. (2010) Socio-economic benefits of protected areas as perceived by local people around Cross River National Park, Nigeria, *Forest Policy and Economics*, 12: 189–193

Farín-Munoz and Amaral, T. (2007), An econometric model for international tourism flows to Spain, *Appied Economic Letters*, 7: 525-529

Farsani, N., Coelho, C. and Costa, C. (2010) Geoparks as Art Museums for Geotourists, *Revista Turismo e Desenvolvimento*, 13: 173-182 2010

Fazenda, N., Silva, F. N. and Costa, C. (2010), Douro Valley Tourism Plan: The plan as part of a sustainable tourist destination development process, *Worldwide Hospitality and Tourism Themes*, 2, 4: 428-440

Finn, M., White, M. and Walton, M. (2000) *Tourism and Leisure Research Methods: Data Collection, Analisys and Interpretation*, Pearson Longman, Essex, England

Florax, R. and Van der List, A (2003) Spatial Econometric Data Analysis: Moving Beyond Traditional Models, *International Regional Science Review* 26, 3: 223–243

Florida, F. (1995) Toward the Learning Region, *Futures*, 27, 5: 527-536

Formica, S. and Kothari, T. (2008) Strategic Destination Planning: Analyzing the Future of Tourism, *Journal of Travel Research*; 46

Frazier, C. and Kockelman, K. (2005), Spatial Econometric Models for Panel Data: Incorporating Spatial and Temporal Data, *84th Annual Meeting of the Transportation Research Board*, Washington, D.C.

Freeman, C. (1991) Networks of innovators: A synthesis of research issues, *Research Policy*, 20: 499-514

Fujita, M. and Krugman, P. (2004) The new economic geography: Past, present and the future, *Papers on Regional Science*, 83: 139–164

Ganau, J. (2008) Reinventing Memories: The Origin and Development of Barcelona's Barri Gòtic, 1880-1950, *Journal of Urban History*, 34

Garin-Muñoz, T. and Amaral, T. (2000) An econometric model for international tourism flows, *Applied Economic Letters*, 7: 525 – 559

Getz, D. (1992) Tourism Planning and Destination Life Cycle, *Annals of Tourism Research*, 19: 752-770

Gilbert, D. (1984). The need for countries to differentiate their tourist product and how to do so, *Seminar papers: Tourism managing for results*, University of Surrey, UK

Gilbert, D. (1990). Strategic marketing planning for national tourism. *The Tourist Review*, 1; 18 - 27.

Gilbert, D. (1993). Consumer behaviour and tourism demand. In C. Cooper, J. Fletcher, D. Gilbert, & S. Wanhill, *Tourism: Principles and practice*, 20-31, Pitman Publishing, London, UK

González, J. A.et al (2008) Rethinking the Galapagos Islands as a complex social-ecological system: implications for conservation and management, *Ecology and Society*, 13, 2: 13

Graburn, N. and Jafari, J. (1991) Tourism Social Science, *Annals of Tourism Research*, 18, 1-11

Greenidge, K. (2001) Forecasting Tourism Demand: an STM Approach, *Annals of Tourism Research*, 28, 1: 98-112

Guizzardi, A. and Mazzocchi, M. (2010) Tourism demand for Italy and the business cycle, *Tourism Management*, 31: 367–377

Hahn, J., Ham, J. and Moon, H. (2009) Test of Random vs Fixed Effects with Small Within Variation

Hall, C. M. (1998) Historical antecedents on sustainable development: new labels on old bottles?, in Hall, C. and Lew, A. (eds) *Sustainable Tourism: a Geographical Perspective*, Longman, London.

Hall, C. M. (2006) Space-Time Acessibility and the TALC: the Role of Geographies of Spatial Interaction and Mobility in Contributing to an Improved Understanding of Tourism, in Butler, R. (ed) *The Tourism Area Life Cycle: Applications and modifications*, Channel View Publications, New York

Hall, C. M. (2007) Tourism and Regional Competitiveness, in Tribe, J. and Airey, D. (eds) *Developments in Tourism Research*, Elsevier, Oxford.

Hall, C. M. and Williams A. (2008) *Tourism and Innovation*, Routledge, New York

Hall, D. (2010) Transport geography and new European realities: a critique, *Journal of Transport Geography*, 18: 1–13

Halkier, H. (2011) EU and Tourism Development: Bark or Bite?, *Scandinavian Journal of Hospitality and Tourism*, 10, 2, 92-106

Hankinson, G. (2004) Relational Network Brands: Towards a Conceptual Model of Place Brands, *Journal of Vacation Marketing*, 10: 109-121

Harrison, D. (2005) Contested Narratives in the Domain of World Heritage, in Harrison, D. and Hitchcock, M. (ed) *The Politics of World Heritage: Negotiating Tourism and Conservation*, Channel View Publications, Clevelon

Hassan, S. (2000) Determinants of Market Competitiveness in an Environmentally Sustainable Tourism Industry, *Journal of Travel Research*; 38; 239

Hassinka, R. (2010) Regional resilience: a promising concept to explain differences in regional economic adaptability?, *Cambridge Journal of Regions, Economy and Society*, 3: 45–58

Hawkins, D.(2004) Sustainable tourism competitiveness clusters: application to World Heritage sites network development in Indonesia, *Asia Pacific Journal of Tourism Research*, 9: 3, 293-307

Haywwod, K. (2006a) Evolution of Tourism Areas and the Tourism Industry, in Butler, R. (ed.) *The Tourism Area Life Cycle, Vol. 1: Applications and Modifications*, Channel View Publications, Clevedon

Haywood, K. (2006b) Legitimizing the TALC as a Theory of Development and Change, in Butler, R. (ed.), *The Tourism Area Life Cycle, Vol. 2: Conceptual and theoretical issues*, Channel View Publications, Clevedon (2006)

Hitchcock, M (2005), Afterward, in Harrison, D. and Hitchcock, M. (ed) *The Politics of World Heritage: Negotiating Tourism and Conservation*, Channel View Publications, Clevelon

Hjalager, A. (2010), A review of innovation research in tourism, *Tourism Management*, 31 (2010) 1–12

Hjalager, A. (2002) Repairing innovation defectiveness in tourism, *Tourism Management*, 23, 465–474

Hoffenberg, P. (2001) Landscape, Memory and the Australian War Experience, 1915–18, *Journal of Contemporary History*, 36, 1: 111–131

Holly, A. and Gardiol, L. (1999) A Score Test for individual Heteroscedasticity in a One-Way Error Components Model, *Cahier No. 9915*, Département d'économétrie et d'économie politique Université de Lausanne

Hong, W. (2009) Global competitiveness measurement for the tourism sector, *Current Issues in Tourism*, 12: 2, 105-132

Hoyer, K. and Aall C. (2005) Sustainable Mobility and Sustainable Tourism in Hall, M. and Higham, J. (ed)., *Tourism, Recreation, and Climate Change*, Channel View Publications, 2005

Hsiao, C. et al (2002) Panel data models covering short time periods, *Journal of Econometrics,* 109*:* 107–150

Hsiao, C., M. Pesaran, H. and Tahmiscioglu, A. (2008), Estimation of dynamic panel data models with both individual and time-specific effects, *Journal of Statistical Planning and Inference*, 138: 2698-2721

Hu, W. and Wall, G. (2005) Environmental Management, Environmental Image and the Competitive Tourist Attraction, *Journal of Sustainable Tourism*, 13, 6

Huybers, T. and Bennett, J. (2002) *Environmental Management and the Competitiveness of Nature-Based Tourism Destinations*, E. Elgar, Northampton, USA

Hynes, S. et al (2009) Alternative treatments of the cost of time in recreational demand models: an application to whitewater kayaking in Ireland, *Journal of Environmental Management*, 90: 1014-1021

Ishikawa, N. and Fukushige, M. (2009) Impacts of tourism and fiscal expenditure on remote islands in Japan: a panel data analysis, *Applied Economics*, 41, 7: 921 – 928

Jafari, J. (1986a) On Domestic Tourism, *Annals of Tourism Research*, 13, 491-496

Jafari, J. (1986b) Tourism for Whom? Old Questions Still Echoing, *Journal of Hospitality & Tourism Research*, 13, 129-162

Jafari, J. and Way, W. (1994), Multicultural Strategies in Tourism, *The Cornell HRA Quarterly*, December

Jafari, J. (2001) The Scientification of Tourism, in Smith, V. and Brent, M. (eds), *Hosts and Guests Revisited: Tourism Issues of the 21st Century*, Cognizant Communication Corporation, New York

Jayoti, D. and Cassandra, E. (2009) Global Tourism Competitiveness and Freedom of the Press: A Nonlinear Relationship, *Journal of Travel Research*; 47; 470

Jenkins, H. (2006). *Convergence culture. Where old and new media collide*, New York University Press, New York

Jennings, G. et al (2009) Quality Tourism Experiences: Reviews, Reflections, Research Agendas, *Journal of Hospitality Marketing and Management*, 18, 294-310

Johnson, D. (2002) Environmentally sustainable cruise tourism: a reality check, *Marine Policy* 26: 261–270

Jones, C. (2004) The Shape of Production Functions and the Direction of Technical Change, *Department of Economics U.C. Berkeley*

Jones, C. (2004) Growth and Ideas, *Department of Economics*, U.C. Berkeley

Jones, C. (2003), Growth, Capital Shares and a new perspective on production functions, *Department of Economics*, U.C. Berkeley

Jones, C. (2001) Was an Industrial Revolution Inevitable? Economic Growth Over the Very Long Run, *Advances in Macroeconomics*, 1, 2

Jones, C. (2001) Population and Ideas: A Theory of Endogenous Growth, *Department of Economics*, U.C. Berkeley

Karanasios, S. and Burgess, S. (2008), Tourism and Internet Adoption: a Developing World Perspective, *International Journal of Tourism Research*, 10, 169–182

Kayar, Ç. and Kozak, N. (2010) Measuring Destination Competitiveness: An Application of the Travel and Tourism Competitiveness Index (2007), *Journal of Hospitality Marketing & Management*, 19: 3, 203-216

Keeble, D. and Wilkinson, F. (2000) *High Technology Clusters, Networking and Collective Learning in Europe*, Ashgate, England

Keum, K. (2010) Tourism flows and trade theory: a panel data analysis with the gravity model, *Annals of Regional Science*, 44: 541–557

Khadarooa, J. and Seetanah, B. (2008) The role of transport infrastructure in international tourism development: A gravity model approach, *Tourism Management*, 29: 831–840

Kildow, J. and McIlgorm, A. (2010) The importance of estimating the contribution of the oceans to national economies, *Marine Policy,* 34 (2010) 367–374

Konig, H. et al (2007) Life Cycle Assessment of a tourism resort with renewed materials and Traditional Construction Techniques, in *Portugal. Sustainable Construction, Materials and Practices*, IOS Press

Kotler et al (2005) *Marketing for Hospitality and Tourism*, Prentice Hall, New Jersey

Kozak, M. (1999) Destination Competitiveness Measurement: Analysis of Effective Factors and Indicators, *European Regional Science Association*

Kozak, M. and Rimmington, M. (1999) Measuring tourist destination competitiveness: conceptual considerations and empirical findings, *Hospitality Management*, 18, 273-283

Kozak, M. et al (2007) Determinants of lenght of stay: A practical use of survival analysis, *Tourism Management*, Volume 28, Issue 3, June 2007, Pages 736-746

Kozak, M. and Martin, D. (2012) Tourism life cycle and sustainability analysis: Profit-focused strategies for mature destinations*, Tourism Management*, 33, 188-194

Kratke, S. (2010) Regional Knowledge Networks: A Network Analysis Approach To the Interlinking of Knowledge Resources, *European Urban and Regional Studies*, 17, 83

Krugman, P. (1991) Increasing Returns and Economic Geography, *The Journal of Political Economy*, 99, 3: 483-499

Krugman, P. (1994) Competitiveness: A Dangerous Obsession, *Foreign Affairs*, 73, 2: 28-44

Krugman, P. (1995) The Localization of the World Economy, *New Perspectives Quarterly*, 12: 34-8

Krugman, P. (1999) The Role of Geography in Development, *International Regional Science Review*, 22: 142

Krugman, P. (2009) The Increasing Returns Revolution in Trade and Geography, *American Economic Review*, 99, 3: 561–57

Kulendran, N. and Wong, K. (2005) Modeling Seasonality in Tourism Forecasting, *Journal of Travel Research*, 44: 163

Ladino, J. (2005) Rewriting Nature Tourism in "An Age of Violence": Tactical Collage in Marianne Moore's "An Octopus", *Twentieth Century Literature*, 51, 3: 285-315

Lagiewski, R. (2006) The application of the TALC: a literature survey, in: R.W. Butler (Ed.), *The Tourism Area Life Cycle: Conceptual and Theoretical Issues*, Channelview Publications, Clevedon: 27–50

Laing, J. and Frsot, W. (2010) How green was my festival: Exploring challenges and opportunities associated with staging green events, *International Journal of Hospitality Management*, 29: 261–267

Landorf, C. (2009) A Framework for Sustainable Heritage Management: a Study of UK Heritage Sites, *International Journal of Heritage Studies*, 15, 6: 494-510

Lawson, T. (2004) Institutionalism: On the Need to Firm up Notions of Social Structure and the Human Subject, *Journal of Economic Issues*, XXXVII, 1

Lee, T. et al (2010) Conflict and Progress: Tourism Development in Korea, *Annals of Tourism Research*, 37, 2: 355–376

Leeuwen, E. and Nijkamp, P. (2010) A microsimulation model for e-services in cultural heritage tourism, *Tourism Economics*, 16, 2, 361-384

Lim, C. (1997) Review of International Tourism Demand Models, *Annals of Tourism Research,* 24, 4: 835-849

Lin, F. (2008) Solving Multicollinearity in the Process of Fitting Regression Model Using the Nested Estimate Procedure, *Quality & Quantity*, 42, 417-426

Lin, Y. and Huang, J. (2006) Internet blogs as a tourism marketing medium: A case study, *Journal of Business Research*, 59, 1201-1205

Lo, I., McKercher, B., Cheung, C. and Law, R. (2011) Tourism and online photography, *Tourism Management*, 32, 725-731

Longhi, S and Nijkamp, P. (2007) Forecasting Regional Labor Market Developments Under Spatial Autocorrelation, *International Regional Science Review* 30, 2: 100-119

Lozano, J., Gomez, C. and Rey-Maquieira (2008), The TALC Hypothesis and economic growth theory, *Tourism Economics*, 14, 4: 727-749

Luis, J. (2008) Turismo de Masas y Transporte: el Gran Reto del Turismo del Siglo XXI, *Scripta Nova*, 12, 258

Lundgren, J. (2006) An Empirical Interpretation of the TALC: Tourist Product Life Cycles in the Eastern Townships of Quebec, in Butler, R. (ed.) *The Tourism Area Life Cycle, Vol. 1 - Applications and Modifications*, Channel View Publications, Clevedon

Lundtorp, S. and Wanhill, S. (2006) Time Path Analysis and TALC Stage Demarcation, in Butler, R. (ed.), *The Tourism Area Life Cycle, Vol. 2: Conceptual and theoretical issues*, Channel View Publications, Clevedon

Lundvall, B. (1992) *National Systems of Innovation*, Pinter Publishers, UK

Lundvall, B. (1998), Why Study National Systems and National Styles of Innovation, *Technology Analysis and Strategic Management*, 10, 4

Lundvall, B. (2002a) Estados-Nación, Capital Social y Desarrollo Económico: Un Enfoque Sistémico de la Creación de Conocimiento y el Aprendizaje en la Economia Global, *Revista de Economía Mundial*, 7, 2002

Lundvall, B (2002b), National systems of production, innovation and competence building, *Research Policy,* 31: 213–231

Mair, J. and Jago, L. (2010) The development of a conceptual model of greening in the business events tourism sector, *Journal of Sustainable Tourism*, 18, 1: 77–94

Malcolm-Davies, J. (2006) The TALC and Heritage Sites, in Butler, R. (ed) *The Tourism Area Life Cycle: Applications and modifications*, Channel View Publications, New York

Maloneya, W. and Rojas, G. (2005) How elastic are sea, sand and sun? Dynamic panel estimates of the demand for tourism, *Applied Economics Letters*, 12: 277–280

Mansson, M. (2011) Mediatized tourism, *Annals of Tourism Research*, 38, 4, 1634-1652

Marquardt, D. (1970) Generalized inverses, ridge regression, biased linear estimation, and nonlinear estimation, *Technometrics*, 12, 591–256

Martin, B. (2006) The TALC Model and Politics, in Butler, R. (ed.) *The Tourism Area Life Cycle, Vol. 1: Applications and Modifications*, Channel View Publications, Clevedon

Martin, R. (1996) Paul Krugman's Geographical Economics and Its Implications for Regional Development Theory: A Critical Assessment, *Economic Geography*, 72, 3: 259-292

Martin, R. (1999) The new 'geographical turn' in economics: Some critical reflections, *Cambridge Journal of Economics*, 23, 1: 65

Martin, R. (2010) Roepke Lecture in Economic Geography - Rethinking Regional Path Dependence: Beyond Lock-in to Evolution, *Economic Geography*, 86, 1

Martin, R. and Sunley, P. (1998) Slow Convergence? The New Endogenous Growth Theory and Regional Development, *Economic Geography*, 74, 3: 201-227

Martin, R. and Sunley, P. (2003) Deconstructing Clusters: chaotic concept or policy panacea, *Journal of Economic Geography*, 3: 5-35

Martin, R. and Sunley, P. (2006) Path dependence and regional economic evolution, *Journal of Economic Geography*, 6: 395–437

Martin, R. and Sunley, P. (2007) Complexity thinking and evolutionary economic geography, *Journal of Economic Geography,* 7: 573–601

Martín, R. and Talavera, A.(ed) (2010) *Destinos turísticos maduros ante el cambio: Reflexiones desde Canarias*, Universidade de La Laguna

Martin, X. (2003), Tacitness, Learning and International Expansion, *Organization Science*

Martin, X. (2002), *Effects of relation-specific and general assets on organizational expansion*, New York University

Martinez-Ros, E. and Orfila-Sintes, F. (2009), Innovation activity in the hotel industry, *Technovation,* 29: 632–641

Matias, A., Nijkamp, P. and Neto, P. (2007) *Advances in Modern Tourism Research*, Physica-Verlag, New York

Manzanek, J. Wober, K. and Zins, A. (2007) Tourism Destination Competitiveness: From Definition to Explanation?, *Journal of Travel Research,* 46, 86

McAleer, A. et al (2010), An econometric analysis of SARS and Avian Flu on international tourist arrivals to Asia, *Environmental Modelling & Software,* 25: 100–106

McElroy, J. (2006) Small Island Tourist Economies Across the Life Cycle, *Asia Pacific Viewpoint*, 47, 1

McKercher, B. (1999) A chaos approach to tourism, *Tourism Management*, 20, 425-434

Mello, M. and Fortuna, N (2005), *Testing alternative dynamic systems for modelling tourism demand*, CETE − Centro de Estudos de Economia Industrial, do Trabalho e da Empresa

Metcalfe, J. (2009) Technology and economic theory, *Cambridge Journal of Economics*, 34: 153–171

Millar, C. and Choi, C. (2011) The innovative future of service industries: (anti-) globalization and commensuration, *The Service Industries Journal*, 31: 1, 21 - 38

Miller, G. and Twining-Ward, L. (2005) *Monitoring for a sustainable tourism transition: the challenge of developing and using indicators*, CABI Publishing, Oxfordshire

Miller, M. et al (2008), The Competitiveness of the Cuban Tourism Industry in the Twenty-First Century: A Strategic Re-Evaluation, *Journal of Travel Research*, 46; 268

Mitchell, C. and Waal, S. (2009), Revisiting the model of creative destruction: St. Jacobs, Ontario, a decade later, *Journal of Rural Studies* 25 156–167

Moore, S. and Weiler, B. (2009), Tourism–protected area partnerships: stoking the fires of innovation, *Journal of Sustainable Tourism*, 17, 2: 129–132

Morley, C. (1998) A Dynamic International Demand Model, *Annals of Tourism Research*, 25, 1: 71-84

Mundet, L. and Coenders, G. (2010) Greenways: a sustainable leisure experience concept for both communities and tourists, *Journal of Sustainable Tourism*, 18, 5: 657–674

Narayan, P, Narayan, S, Prasad, A, Prasad, B. (2010) Tourism and Economic Growth: a Panel Data Analysis for Pacific Island Countries, *Tourism Economics*, 16, 1: 169-183

Navickas, V. and Malakauskaite, A. (2009) The Possibilities for the Identification and Evaluation of Tourism Sector Competitiveness Factors, *Engineering Economics*, 1: 61

Navickas, V. and Malakauskaite, A. (2010) Level of Clusterization and Tourism Sector Competitiveness, *Engineering Economics*, 21(1)

Nejad, S. and Tularam, G. (2010) Modeling Tourist Arrivals in Destination Countries: An Application to Australian Tourism, *Journal of Mathematics and Statistics*, 6, 4: 431-441

Nel, E. and and Binns, T. (2002) Place Marketing, Tourism Promotion, and Community based Local Economic Development in Post-Apartheid South Africa: The Case of Still Bay - The "Bay of Sleeping Beauty", *Urban Affairs Review*, 38: 184

Nelson, R. and Nelson, K. (2002) Technology, institutions, and innovation systems, *Research Policy*, 31: 265–272

Nelson, R. (2002) Erratum to "Technology, institutions, and innovation systems", *Research Policy*, 31: 1509

Neriko, D. (2010) Heritage, Nationhood and Language, *Critical Asian Studies*, 42, 1: 53-62

Neumayer, E. (2004) The Impact of Political Violence on Tourism: Dynamic Cross-National Estimation, *The Journal of Conflict Resolution*, 48, 2: 259-281

O'Brien, R. (2007) A Caution Regarding Rules of Thumb for Variance Inflation Factors, *Quality & Quantity*, 41, 673-690

Oppermann, M. (1995) Travel Life Cycle, *Annals of Tourism Research*, 22, 3: 535-552

Ozturkmen, A. (2005) Turkish Tourism at the Door of Europe: Perceptions of Image in Historical and Contemporary Perspectives, *Middle Eastern Studies*, 41, 4: 605

Pai, P. et al (2010) Time series forecasting by a seasonal support vector regression model, *Expert Systems with Applications*, 37: 4261-4265

Paniccia, I. (1998) One, a Hundred, Thousands of Industrial Districts. Organizational Variety in Local Networks of Small and Medium-sized Enterprises, *Organization Studies*, 19, 4

Papatheodorou, A. (2006) TALC and the Spatial Implications of Competition, in Butler, R. (ed) *The Tourism Area Life Cycle: Applications and modifications*, Channel View Publications, New York

Park, H. (2010) Heritage Tourism - Emotional Journeys into Nationhood, *Annals of Tourism Research*, 37, 1: 116-135

Parra-López , E., Bulchand-Gidumal, J., Gutiérrez-Taño, D. and Díaz-Armas (2011) Intentions to use social media in organizing and taking vacation trips, *Computers in Human Behavior*, 27, 640–654

Parsons, D. and Kealy, M. (1995) A Demand Theory for Number of Trips in a random Utility Model of Recreation, *Journal of Environmental Economics and Management*, 29: 357-367

Pikea, A. et al (2010) Resilience, adaptation and adaptability, Cambridge Journal of Regions, *Economy and Society*, 3: 59–70

Pinilla (2009) Between Real and Ideal: Do the Approaches Proposed by the ONU on Sustainable Tourism Contribute to Rural Territorial Development?, *Cuadernos de Desarrollo Rural*, 6, 62

Pinto, H. and Guerreiro, J. (2010) Innovation regional planning and latent dimensions: the case of the Algarve region, *Annals of Regional Science*, 44: 315–329

Plog, S. (1972) Why Destination Areas Rise and Fall in Popularity, *Hotel and Restaurant Administration Quarterly*, 14: 55-58

Poon, A. (1993) *Tourism, technology and competitive strategies*, Oxford, CAB International, UK

Poon, A (1994), The 'new tourism' revolution, *Tourism Management,* 15, 2: 91 - 92

Poria, Y. et al (2006) Visitors' Preferences for Interpretation at Heritage Sites, *Journal of Travel Research*, 48: 92

Poria, Y. et al (2006) Heritage Site Perceptions and Motivations to Visit, *Journal of Travel Research*, 44: 318

Poria, Y., Butler, R. and Airey, D. (2001) Clarifying Heritage Tourism, *Annals of Tourism Research*, 28, 4: 1047–1049

Poria, Y., Butler, R., Airey, D. (2003a) The Core of Heritage Tourism, *Annals of Tourism Research*, 30, 1: 238–254

Poria, Y., Butler, R. and Airey, D. (2003b) Revisiting Mieczowski's conceptualization of tourism, *Tourism Geographies,* 5, 1: 26-38

Porter, M. (1985), "Industry scenarios under competitive strategy under uncertainty", in *Competitive advantage - creating and sustaining superior performance*, pp. 445 - 481, The Free Press

Porter, M. (2000) Location, Competition, and Economic Development: Local Clusters in a Global Economy, *Economic Development Quarterly*, 14, 15

Porter, M. (2003) The Economic Performance of Regions, *Regional Studies*, 37, 6-7: 549–578

Porter, M. and Siggelkow, N. (2008) Contextuality within Activity Systems and Sustainability of Competitive Advantage, *Perspectives*, May

Potter, A. and Watts D. (2010) Evolutionary agglomeration theory: increasing returns, diminishing returns, and the industry life cycle, *Journal of Economic Geography*, 1 – 39

Proença, S. and Soukiakis, E. (2008) Tourism as an economic growth factor: a case stymy for Southern European countries, *Tourism Economics*, 14, 4: 791-806

Pulido-Fernández, J. and Sánchez-Rivero, M. (2010) Attitudes of the cultural tourist: a latent segmentation approach, *Journal of Cultural Economics*, 34:111–129

Pulina, M., Dettori, D. and Paba, A. (2006) Life cycle of agrotouristic firms in Sardinia, *Tourism Management*, 27: 1006–1016

Raco, M. (1999) Competition, Collaboration and the New Industrial Districts: Examining the Institutional Turn in Local Economic Development, *Urban Studies*, 36, 5-6: 951-968

Ramos, T. and Caeiro, S. (2010) Meta-performance evaluation of sustainability indicators, *Ecological Indicators*, 10: 157–166

Ritchie, J. and Crouch, G. (1999) Tourism, Competitiveness, and Societal Prosperity, *Journal of Business Research* 44, 137–152

Ritchie, J. and Crouch, G. (2000) The competitive destination: A sustainability perspective, *Tourism Management*, 21, 1-7

Ritchie, J. and Crouch, G. (2003)**,** *The competitive destination: A sustainable Tourism perspective, CABI Publishing, Oxfordshire,* CABI International Publishing, Wallingford

Rivera-Batiz, L. and Romer, P. (1991) Economic Integration and Endogenous Growth, *The Quarterly Journal of Economics*

Rodriguez, J., Parra-Lopez, E. and Yanez-Estevez, V. (2008) The Sustainability of Island Destinations: Tourism Area Life Cycle and Teleological Perspectives. The Case of Tenerife, *Tourism Management* 29: 53–65

Romer, P. (1986) Increasing Returns and Long-Run Growth, *The Journal of Political Economy*, 94, 5: 1002-1037

Romer, P. (1987) Growth Based on Increasing Returns Due to Specialization, *The American Economic Review*, 77, 2: 56-62

Romer, P. (1994) The Origins of Endogenous Growth, *The Journal of Economic Perspectives*, 8, 1: 3-22

Romer, P. et al (1996), Growth Cycles, *NBER Working Paper* 5659

Rosselló, J. et al (2005) Modeling Tourism Demand Dynamics, *Journal of Travel Research*, 44, 111

Russell, R. (2006a) Chaos theory and its application to the TALC model, in: R.W. Butler (Ed.), *The Tourism Area Life Cycle, Vol. 2: Conceptual and Theoretical Issues*, Channelview Publications, Clevedon: 164–180.

Russel, R. (2006b) The Contribution of Entrepeneurship Theory to the TALC model, in Butler, R. (ed.), *The Tourism Area Life Cycle, Vol. 2: Conceptual and theoretical issues*, Channel View Publications, Clevedon

Russell, R. and Faulkner, W. (1999) Movers and shakers: chaos makers in tourism development, *Tourism Management* 20: 411–423

Russo, A. (2006) A Re-foundation of the TALC for Heritage Cities, in Butler, R. (ed) *The Tourism Area Life Cycle: Applications and modifications*, Channel View Publications, New York

Russo, A. (2001) The "Vicious Circle" of Tourism Development in Heritage Cities, *Annals of Tourism Research*, 29, 1: 165-182

Savova, N. (2009) Heritage Kinaesthetics: Local Constructivism and UNESCO's Intangible-Tangible Politics at a Favela Museum, *Anthropological Quarterly*, 82, 2: 547–586

Schellhorn, M. (2010) Development for whom? Social justice and the business of ecotourism, *Journal of Sustainable Tourism*, 18, 1: 115 – 135

Schianetz, K. (2007) Concepts and Tools for Comprehensive Sustainability Assessments for Tourism Destinations: A Comparative Review, *Journal of Sustainable Tourism*, 15, 4

Scott, A. (2001) Globalization and the Rise of City-regions, *European Planning Studies*, 9, 7

Scott, A. and Storper, M. (2003) Regions, Globalization, Development, *Regional Studies*, 37, 6&7, 579-593

Scott, D. (2011) Why sustainable tourism must address climate change, *Journal of Sustainable Tourism*, Vol. 19, No. 1, January 2011, 17–34

Scott, N., Laws, E. and Boksberger, P. (2009) The Marketing of Hospitality and Leisure Experiences, *Journal of Hospitality Marketing & Management*, 18: 2, 99 - 110

Sequeira, T. and Campos, C. (2007) International Tourism and Economic Growth: A Panel Data Approach, in *Advances in Modern Tourism Research*, Physica-Verlag HD

Shanks, C. (2009) The global compact: The conservative politics of international tourism, Futures 41: 360–366

Sharpley, R. (2009) *Tourism Development and the Environment: Beyond Sustainability?*, Earthscan, London

Sharpley, R. and Pendler, L. (ed.) (2005) *The Management of Tourism*, SAGE, London

Sigala, M. (2010). WEB 2.0, Social Marketing Strategies and Distribution Channels for City Destinations: Enhancing the Participatory Role of Travelers and Exploiting their Collective Intelligence, In Dasgupta, S. (Ed.) *Social Computing: Concepts, Methodologies, Tools, and Applications*: 1280-1304

Silva, J., Jafari, J. and Scott, N. (ed) (2010) *Tourism Development and Management*, Universidade do Algarve

Silva, J., Rodrigues, P., Mendes, J. and Pereira, L. (2010) A Tourism Research Agenda for Portugal, *International Journal of Tourism Research*, 12, 90–101

Simmie, J. (2006) Do Clusters or Innovation Systems drive competitiveness, in Asheim, B et al (ed) *Clusters and Regional Development*, Routledge, New York

Smeral, E. (2010) Impacts of the World Recession and Economic Crisis on Tourism: Forecasts and Potential Risks, *Journal of Travel Research*, 49, 31

Sobhee, S. (2006) Fisheries biodiversity conservation and sustainable tourism in Mauritius, *Ocean & Coastal Management*, 49: 413–420

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

Song, H. and Witt, S. (2006) Forecasting international tourist flows to Macau, *Tourism Management*, 27: 214–224

Song, G. and Witt, S. (2005) Recent Developments in Econometric Modeling and Forecasting, *Journal of Travel Research*, 44, 82

Song, H. and Witt, S. (2003) Tourism Forecasting: The General-to-Specific Approach, *Journal of Travel Research*, 42, 65

Soukiazis, E. and Proença, S. (2007) Tourism as an alternative source of regional growth in Portugal: a panel data analysis at NUTS II and III levels, *Discussion Paper 34*, Faculdade de Economia da Universidade de Coimbra

Soukiazis, E. and Proença, S. (2007) Tourism as an economic growth factor: a case-study for Southern European Countries, *Tourism Economics*, 14, 4: 791-806

Sternberg, R. and Arndt, O. (2001) The Firm or the Region: What Determines the Innovation Behavior of European Firms?, *Economic Geography*, 77, 4: 364-382

Stoneman, P. (2000), Path Dependency and Reswitching in a Model of Multi Technology Adoption, *Festchrift for Paul David*, Stanford University

Strickland-Munro, J. et al (2010) Using Resilience Concepts to Investigate the Impacts of Protected Area Tourism on Communities, *Annals of Tourism Research*, 37, 2: 499–519

Taylor Jr., H. and David, L. (2009) International tourism in Cuba: Can capitalism be used to save socialism?, *Futures*, 41: 405–413

Tchetchik, A. et al (2009), Segmentation of Visitors to a Heritage Site Using High-resolution Time-space Data, *Journal of Travel Research*, 48: 216

Theobald, W. (ed) (2005) *Global Tourism*, Elsevier, Burlington

Tileaga, C. (2009) Cultural Tourism Attractions and Envoronmental Performance, *Buletin Stiintific*, 1, 27

Tooman, L. (1997) Multipliers and Life Cycles: A Comparison of Methods for Evaluating Tourism and Its Impacts, *Journal of Economic Issues*, 31, 4: 917-932

Torraleja, F. et al (2009) Flows into Tourist Areas: an Econometric Approach, *International Journal of Tourism Research*, 11, 1–15 (2009)

Tribe, J. and Xiao, H. (2011) Developments in Tourism Social Science, *Annals of Tourism Research*, 38, 1, 7-26

Tsai, H., Song, H. and Wong, K. (2009). Tourism and Hotel Competitiveness. *Journal of Travel and Tourism Marketing*, 26, 5, 522 – 546.

Tushman, M. and Nelson, R. (1990) Introduction: Technology, Organizations, And Innovation, *Administrative Science Quarterly*, 35, 1

UNESCO (2000) *Sustainable Tourism and the Environment*

UNESCO (2001) *A Proposed Framework for the Development of Joint Cooperation On Nature Conservation and Sustainable Tourism At World Heritage Natural sites*

UNESCO (2002) *Managing Tourism at World Heritage Sites: a Practical Manual for World Heritage Site Managers*

UNESCO (2005) *World Heritage Centre - Sustainable Tourism Programme*

UNESCO (2008) *The Partnership for Global Sustainable Tourism Criteria*

United Nations Economic Commission for Europe (2OO9) *Measuring Sustainable Development*

UNWTO (2005) Historical Perspective of World Tourism

UNWTO (2006), *Seminar on Tourism Sustainability and Local Agenda 21 in Tourism Destinations*, Madrid

UNWTO (2007), *Practical Guide to Tourism Destination Management*, Madrid

UNWTO (2009a) *Tourism Highligths*, 2009 edition, Madrid

UNWTO (2009b) From Davos to Copenhagen and beyond: advancing tourism's response to climate change, *Background Paper*, Madrid

UNWTO (2010) Resultados del turismo internacional en 2009 y perspectivas para 2010, *Press Release*, 18/1/, Madrid

UNWTO (2011) UNWTO Algarve Forum sets a consensus for tourism strategies, *Press Release*, 9/6, Madrid

Usakli, A. and Baloglu, S. (2011) Brand personality of tourist destinations: An application of self-congruity theory, *Tourism Management,* 32, 114-127

Vanhove, N. (2005), *The Economics of Tourism Destinations*, Oxford, Elsevier Butterworth - Heinemann

Vellas, F. (1985) Les determinants du Tourism International: Dotations Factorielles, couts comparatifs et demande touristique, *Economie et politique du tourisme international*, Economica, Paris

Viñas, C. (2008) Vivienda Secundaria y Turismo Residencial como Agentes de Urbanización y Segregación Territorial en Cantabria, *Scipta Nova*, 12, 269

Vu, J. and Turner (2006) Regional Data Forecasting Accuracy: The Case of Thailand, *Journal of Travel Research*, 45: 186

Wall, G. (1982) Cycles and capacity: Incipient theory or conceptual contradiction?, *Tourism Management*, September

Wall, G. and Mathieson, A. (2006) *Tourism: Change, Impacts and Opportunities*, Pearson, Essex

Wang, Y., Q. Yu, and D. Fesenmaier (2001) Defining the Virtual Tourist Community: Implications for Tourism Marketing, *Tourism Management,* 23: 407–417

Weaver, D. (2000) A broad context model of destination development scenarios, Tourism Management, 21: 217-224

Weaver, D. (2006a) *Sustainable Tourism: Theory and Practice*, Elsevier, Oxford

Weaver, D. (2006b) The "Plantation" Variant of the TALC in the Small-island Caribbean, in Butler, R. (ed.) *The Tourism Area Life Cycle, Vol. 1: Applications and Modifications*, Channel View Publications, Clevedon

Weaver, D. (2010) Indigenous tourism stages and their implications for sustainability, *Journal of Sustainable Tourism*, 18, 1: 43-60

Weaver, D. (2011) Contemporary Tourism Heritage as Heritage Tourism: Evidence from Las Vegas and Gold Coast, *Annals of Tourism Research*, 38, 1, 249–267

Whitford, M. and Ruhanen, L. (2010) Australian indigenous tourism policy: practical and sustainable policies?, *Journal of Sustainable Tourism*, 18, 4: 475–496

Wiliams, A. and Shaw, G. (2011) Internationalization and Innovation in Tourism, *Annals of Tourism Research*, 38, 1, 27–51

Williams, P. and Ponsford, I. (2009), Confronting tourism's environmental paradox: Transitioning for sustainable tourism, *Futures*, 41: 396–404

Witt, S. et al (2003) Statistical Testing in Forecasting Model Selection, *Journal of Travel Research*, 42, 151

Witt, S. and Witt, A. (1995) Forecasting tourism demand: A review of empirical research, *International Journal of Forecasting*, 11: 447-475

Wyman, M. and Stein, T. (2010) Examining the Linkages Between Community Benefits, Place-Based Meanings, and Conservation Program Involvement: A Study Within the Community Baboon Sanctuary, Belize, *Society & Natural Resources*, 23, 6: 542 — 556

World Economic Forum (2008) *The Travel & Tourism Competitiveness Report 2008*, Geneva

World Economic Forum (2009) *The Travel & Tourism Competitiveness Report 2009*, Geneva

World Travel and Tourism Council (2002), *Corporate Social Leadership in Travel and Tourism*

World Travel and Tourism Council (2006) *Blueprint for New Tourism*

World Travel and Tourism Council (2007), *Progress and Priorities 2007 / 2008*

Yarcan, S. (2007) Coping with Continuous Crises: The Case of Turkish Inbound Tourism, *Middle Eastern Studies*, 43, 5: 779 – 794

Yu, G. and Zvi, S. (2006) Forecasting Short Time-Series Tourism Demand with Artificial Intelligence Models, *Journal of Travel Research*, 45: 194

Yuanyuan, L. (2008) Nationality Tourism and Community Education, *Chinese Sociology and Anthropology*, 40, 3: 72–87

Yuksel, S. (2007) An integrated forecasting approach to hotel demand Sedat, *Mathematical and Computer Modeling*, 46: 1063 -1070

Zhang, A. et al (2011) The evaluation of tourism destination competitiveness by TOPSIS & information entropy - A case in the Yangtze River Delta of China, *Tourism Management*, 32, 443-451

Zhong, L. et al (2008) Tourism development and the tourism area life-cycle model: A case study of Zhangjiajie National Forest Park, China, *Tourism Management* 29: 841–856

ANNEXES:

The final part of this work includes an exhaustive presentation of the data used in this work, mentioning their sources and specification.

Competitiveness - Nights spent in Hotels and similar establishments (2003 – 2008)

Unit: Thousands

Source: Eurostat

Definition: A night spent (or overnight stay) is each night that a guest actually spends (sleeps or stays) or is registered (his/her physical presence there being unnecessary) in an accommodation establishment. Overnight stays are calculated by country of residence of the guest and by month. Normally the date of arrival is different from the date of departure but persons arriving after midnight and leaving on the same day are included in overnight stays. A person should not be registered in two accommodations at the same time. The overnight stays of non-tourists (e.g. refugees) should be excluded, if possible. Hotels and similar establishments are typified as being arranged in rooms, in number exceeding a specified minimum; as coming under a common management; as providing certain services including room service, daily bed-making and cleaning of sanitary facilities; as grouped in classes and categories according to the facilities and services provided; and as not falling in the category of specialised establishments.

	2003	2004	2005	2006	2007	2008
Galicia	7640816	9191098	9003471	9141195	9409227	9175581
Asturias	3803549	4040982	4602595	4927821	4967304	4523227
Cantabria	3918119	3984405	4452910	4748953	4525454	4289752
Pais Vasco	3682815	4022385	4330894	4728840	4743195	4642321
Navarra	1808942	1904342	2118961	2277685	2186186	2215738
La Rioja	1091352	1120690	1167088	1329191	1320443	1346935
Aragón	5381277	5360519	5522160	5930207	6280083	7007159
Comunidad de Madrid	13765532	14942625	16584935	18251589	19660122	18926093
Castilla y León	7768380	8349368	8488332	9372530	9962781	9848627
Castilla-la Mancha	3525936	3714745	4005777	4277669	4629100	4563707
Extremadura	2111233	2185793	2178929	2535993	2706403	2713577
Cataluña	57597954	58124216	60604372	63409902	63399740	63199942
Comunidad Valenciana	34536607	35862548	37125458	39048464	39787171	38105312
Illes Balears	60287743	58506798	60213255	63453752	62166198	60637827
Andalucia	46614637	48725521	51411992	53875106	54675767	54277991
Región de Murcia	5016563	4948997	4986151	4918031	5294990	5061894
Canarias (ES)	83763836	79037004	76324084	86781961	85904577	85015211
Île de France	58085076	59674027	62565134	63105173	68677853	67528487
Champagne-Ardenne	3080460	3286541	3396399	3292166	3347560	3360208
Picardie	3212026	3167081	3503786	3538081	3446409	3452360
Haute-Normandie	3602162	3676116	3640008	3538664	3436307	3531917
Centre	7497002	7398476	7564291	7429204	7486620	7564041
Basse-Normandie	6915857	7465470	7035209	7288590	7284914	7136155
Bourgogne	5546084	5910836	6166266	5957118	5961625	5969794
Nord - Pas-de-Calais	6660183	6977713	6677648	6901879	6804154	6807952
Lorraine	4689101	4572459	4538088	4514806	4618511	4531246
Alsace	6858249	6859870	6772660	6436912	6588825	6612599
Franche-Comté	3409420	3258284	3306334	3095874	3059979	3123821
Pays de la Loire	15255064	15205551	15394007	15967858	15793027	15936422
Bretagne	16377928	16403048	16145246	16645211	15779376	15301471
Poitou-Charentes	11004170	10983699	11052437	11095113	10995808	11055640
Aquitaine	19274325	20596022	20771854	21708395	21376576	21239290
Midi-Pyrénées	13698324	13575484	13752150	13863482	13591233	14483670
Limousin	2113180	2079246	2145192	2177012	2055095	2080535
Rhône-Alpes	26154264	25202709	25742463	25730866	25671871	25720657
Auvergne	5461356	5297044	5413734	5217893	4894640	4975259
Languedoc-Roussillon	23919417	23491268	23403070	23670822	24383675	24624646

Prov.-Alpes-C. d'Azur	33947088	32469338	34822817	34427420	35125884	35154952
Corse	6336566	5467140	6122194	6384444	6240956	6186201
Piemonte	8943998	9342471	10179127	11063326	10317171	11558330
Valle d'Aosta	3496219	3198211	3188648	3207724	3106584	3113340
Liguria	14769598	14214124	13832991	14212325	14170265	14130514
Lombardia	25972014	26473149	26494968	27021759	28648519	28303505
Bolzano-Bozen	25675371	25698308	26139024	26400389	27293308	27699447
Trento	13895216	13848755	14495715	14589041	14703083	14873012
Veneto	55111931	54559238	56725302	59359084	61529573	60607073
Friuli-Venezia Giulia	8863178	8568595	8391287	8483114	8734021	8878927
Emilia-Romagna	36621302	36287912	36219769	37469142	38174466	38361397
Toscana	36837331	35454949	37960671	40943455	41695840	41261956
Umbria	5795242	5753804	5820925	6137303	6252102	6011326
Marche	13449366	12853376	12497502	13048927	13584582	11478362
Lazio	24054701	28094505	31709665	32166213	32107593	31676127
Abruzzo	7115155	6933216	6853114	7449579	7374646	7560476
Molise	769334	754964	747805	742536	652171	659205
Campania	19708952	19907514	19206477	19145883	19774742	18722386
Puglia	10702634	10395189	10829774	10320781	11481603	12183376
Basilicata	1761639	1922098	1954865	1743680	1856789	1862373
Calabria	7333813	7701394	7838849	8155053	8731335	8493339
Sicilia	13152348	13351037	13721380	14574524	14602145	13938295
Sardegna	10383975	10303418	10208792	10530940	11851213	12293922
Norte	4504916	4429699	4763876	5136348	5456433	5353260
Algarve	16125202	15175219	15763019	16179537	16692909	16244877
Centro (PT)	5011357	5391515	5579603	5886494	6194906	6201555
Lisboa	7376611	8199366	8350929	9377199	10228516	10039073
Alentejo	1859753	1935608	1907773	1914292	2104127	2041087
Açores (PT)	855989	1019556	1185168	1222006	1234747	1177885
Madeira (PT)	5671143	5571984	5714714	5806028	6052971	6271100

Regional Efforts in Science and Technology - Human resources in science and technology (2003 – 2008)

Unit: %

Source: Eurostat

Definition: Human resources in science and technology (HRST) as a share of the economically active population in the age group 15-74. This indicator gives the percentage of the total labour force in the age group 15-74, that is classified as HRST, i.e. having either successfully completed an education at the third level or is employed in an occupation where such an education is normally required. HRST are measured mainly using the concepts and definitions laid down in the Canberra Manual, OECD, Paris, 1995

	2003	2004	2005	2006	2007	2008
Galicia	36,5%	36,8%	41,8%	46,4%	44,7%	45,1%
Asturias	43,2%	45,9%	51,8%	48,8%	51,1%	48,1%
Cantabria	42,9%	43,0%	46,7%	52,8%	46,6%	48,5%
Pais Vasco	55,4%	55,8%	60,8%	62,7%	63,3%	63,9%
Navarra	48,4%	47,1%	51,6%	55,1%	53,2%	49,3%
La Rioja	38,7%	40,5%	42,6%	40,5%	45,9%	42,1%
Aragón	44,9%	46,8%	44,9%	48,4%	45,2%	47,1%
Comunidad de Madrid	49,9%	51,5%	53,1%	53,8%	55,4%	59,0%
Castilla y León	41,9%	42,6%	42,9%	43,8%	45,8%	44,6%
Castilla-la Mancha	29,4%	29,1%	32,1%	33,5%	35,7%	34,0%
Extremadura	31,0%	29,9%	32,5%	35,6%	35,4%	36,7%
Cataluña	38,3%	40,5%	42,8%	42,5%	39,5%	41,9%
Comunidad Valenciana	33,9%	37,0%	39,5%	41,1%	40,5%	39,4%
Illes Balears	29,0%	28,0%	30,9%	31,5%	35,5%	30,0%
Andalucia	34,3%	34,2%	36,5%	37,7%	38,9%	38,1%
Región de Murcia	33,6%	33,9%	34,7%	38,1%	33,9%	35,9%
Canarias (ES)	33,4%	35,3%	37,7%	37,2%	38,5%	35,4%
Île de France	58,9%	58,6%	63,5%	64,3%	62,3%	64,0%
Champagne-Ardenne	31,9%	31,7%	35,5%	37,1%	37,0%	35,5%
Picardie	33,9%	32,9%	36,6%	33,6%	33,2%	40,1%
Haute-Normandie	38,8%	38,8%	37,1%	35,5%	43,7%	36,7%
Centre	36,0%	40,2%	36,2%	41,5%	39,9%	44,2%
Basse-Normandie	33,3%	34,4%	41,8%	40,1%	43,9%	44,9%
Bourgogne	34,4%	38,0%	35,7%	35,7%	36,2%	41,7%
Nord - Pas-de-Calais	37,5%	36,6%	36,5%	38,8%	40,8%	42,1%
Lorraine	34,7%	35,7%	37,8%	36,6%	40,2%	36,2%
Alsace	43,2%	42,6%	45,7%	43,5%	47,9%	45,4%
Franche-Comté	36,3%	39,1%	37,6%	42,3%	38,2%	46,0%
Pays de la Loire	36,2%	39,4%	39,0%	41,1%	36,6%	42,5%
Bretagne	40,3%	41,1%	46,5%	47,2%	52,3%	44,9%
Poitou-Charentes	33,1%	39,1%	38,4%	37,3%	40,6%	36,5%
Aquitaine	41,0%	39,2%	43,2%	44,7%	46,1%	47,6%
Midi-Pyrénées	40,6%	42,1%	50,3%	51,6%	45,3%	55,3%
Limousin	36,0%	32,5%	38,4%	36,7%	41,8%	45,1%
Rhône-Alpes	44,0%	44,2%	42,8%	46,9%	47,6%	48,5%
Auvergne	35,0%	39,9%	40,6%	38,0%	44,3%	45,9%
Languedoc-Roussillon	44,9%	44,1%	46,3%	48,9%	46,8%	48,7%
Provence-Alpes-Côte d'Azur	43,2%	45,6%	46,5%	47,3%	46,0%	44,8%
Corse	30,3%	38,3%	30,6%	54,4%	47,9%	39,3%

Piemonte	32,0%	29,3%	32,5%	36,6%	38,2%	37,2%
Valle d'Aosta/Vallée d'Aoste	27,8%	31,5%	31,8%	33,2%	32,5%	30,6%
Liguria	37,2%	43,3%	40,1%	41,3%	43,5%	44,2%
Lombardia	32,7%	36,4%	37,3%	39,5%	41,2%	41,0%
Bolzano-Bozen	28,0%	30,7%	31,8%	33,4%	35,2%	34,9%
Trento	31,9%	32,7%	34,7%	37,1%	40,0%	38,3%
Veneto	29,3%	32,0%	32,6%	34,0%	35,9%	35,6%
Friuli-Venezia Giulia	32,5%	33,5%	36,0%	38,5%	39,9%	38,2%
Emilia-Romagna	32,0%	33,6%	35,2%	37,3%	39,1%	39,6%
Toscana	32,3%	35,5%	35,3%	37,9%	38,8%	38,5%
Umbria	34,5%	40,0%	35,9%	36,6%	37,7%	37,0%
Marche	29,3%	34,2%	33,6%	36,0%	35,6%	34,8%
Lazio	38,7%	40,1%	41,3%	44,1%	46,4%	45,0%
Abruzzo	32,2%	34,4%	36,1%	37,3%	37,0%	38,2%
Molise	30,6%	30,8%	34,5%	35,3%	36,8%	35,8%
Campania	29,0%	29,6%	31,2%	33,2%	33,8%	34,6%
Puglia	28,6%	28,6%	28,9%	31,3%	32,6%	33,2%
Basilicata	25,7%	29,7%	32,3%	34,0%	35,7%	35,0%
Calabria	28,4%	33,7%	33,2%	34,9%	38,3%	39,0%
Sicilia	29,6%	30,0%	31,2%	33,4%	34,4%	34,1%
Sardegna	27,9%	26,3%	27,9%	32,0%	33,2%	31,5%
Norte	13,6%	15,6%	16,0%	17,2%	18,0%	19,0%
Algarve	15,7%	21,8%	23,7%	22,0%	18,9%	20,6%
Centro (PT)	13,2%	16,2%	16,0%	16,5%	16,6%	17,7%
Lisboa	29,6%	34,4%	34,6%	35,8%	34,6%	35,3%
Alentejo	14,3%	16,7%	19,0%	18,1%	20,3%	23,5%
Açores (PT)	14,3%	14,7%	15,5%	16,1%	15,2%	14,5%
Madeira (PT)	14,6%	18,8%	17,9%	16,9%	18,4%	19,8%

Cultural Resources - Heritage Sites (2003 – 2008)

Unit: Units

Source: UNESCO

Definition: Number of cultural sites classified by UNESCO as World Heritage Sites (when sites are located in more than one region, one site per region is considered)

	2003	2004	2005	2006	2007	2008
Galicia	3	3	3	3	3	3
Asturias	1	1	1	1	1	1
Cantabria	1	1	1	1	1	1
Pais Vasco	0	0	0	1	1	1
Navarra	1	1	1	1	1	1
La Rioja	2	2	2	2	2	2
Aragón	4	4	4	4	4	4
Comunidad de Madrid	4	4	4	4	4	4
Castilla y León	7	7	7	7	7	7
Castilla-la Mancha	3	3	3	3	3	3
Extremadura	3	3	3	3	3	3
Cataluña	6	6	6	6	6	6
Comunidad Valenciana	3	3	3	3	3	3
Illes Balears	1	1	1	1	1	1
Andalucia	5	5	6	6	6	6
Región de Murcia	1	1	1	1	1	1
Canarias (ES)	2	2	2	2	3	3
Île de France	5	5	5	5	5	5
Champagne-Ardenne	2	2	2	2	2	2
Picardie	3	3	3	3	3	3
Haute-Normandie	0	0	1	1	1	1
Centre	4	4	4	4	4	4
Basse-Normandie	2	2	2	2	2	3
Bourgogne	3	3	3	3	3	3
Nord - Pas-de-Calais	1	1	1	1	1	2
Lorraine	1	1	1	1	1	2
Alsace	1	1	1	1	1	1
Franche-Comté	1	1	1	1	1	2
Pays de la Loire	1	1	1	1	1	1
Bretagne	0	0	0	0	0	1
Poitou-Charentes	2	2	2	2	2	3
Aquitaine	3	3	3	3	4	5
Midi-Pyrénées	3	3	3	3	3	3
Limousin	1	1	1	1	1	1
Rhône-Alpes	1	1	1	1	1	1
Auvergne	1	1	1	1	1	1
Languedoc-Roussillon	4	4	4	4	4	6
Provence-Alpes-Côte d'Azur	4	4	4	4	4	6
Corse	1	1	1	1	1	1

Piemonte	2	2	2	2	2	2
Valle d'Aosta	0	0	0	0	0	0
Liguria	1	1	1	2	2	2
Lombardia	4	4	4	4	4	6
Bolzano-Bozen	0	0	0	0	0	0
Trento	0	0	0	0	0	0
Veneto	4	4	4	4	4	4
Friuli-Venezia Giulia	1	1	1	1	1	1
Emilia-Romagna	3	3	3	3	3	3
Toscana	5	6	6	6	6	6
Umbria	1	1	1	1	1	1
Marche	1	1	1	1	1	1
Lazio	3	4	4	4	4	4
Abruzzo	0	0	0	0	0	0
Molise	0	0	0	0	0	0
Campania	5	5	5	5	5	5
Puglia	2	2	2	2	2	2
Basilicata	1	1	1	1	1	1
Calabria	0	0	0	0	0	0
Sicilia	4	4	5	5	5	5
Sardegna	1	1	1	1	1	1
Norte	4	4	4	4	4	4
Algarve	0	0	0	0	0	0
Centro (PT)	2	2	2	2	2	2
Lisboa	3	3	3	3	3	3
Alentejo	1	1	1	1	1	1
Açores (PT)	1	2	2	2	2	2
Madeira (PT)	1	1	1	1	1	1

Natural Resources – Protected Areas (2008)

Unit: %

Source: European Union - Environment

Definition: Part of regional territory included in Natura 2000 (including habitats and birds directives)

	2000	Total Area	%
Galicia	3436	29574	11,6%
Principado de Asturias	2860	10604	27,0%
Cantabria	1474	5321	27,7%
Pais Vasco	1456	7235	20,1%
Comunidad Foral de Navarra	2522	10391	24,3%
La Rioja	1679	5045	33,3%
Aragon	13541	47721	28,4%
Comunidad de Madrid	3194	8028	39,8%
Castilla y Leon	24598	94225	26,1%
Castilla-La Mancha	18358	79461	23,1%
Extremadura	12561	41634	30,2%
Cataluna	9588	32114	29,9%
Comunidad Valenciana	8703	23260	37,4%
Illes Balears	1143	4992	22,9%
Andalucia	25845	87599	29,5%
Region de Murcia	2657	11314	23,5%
Canarias	3483	7447	46,8%
Ile de France	967	12012,3	8,0%
Champagne-Ardenne	3100	25605,8	12,1%
Picardie	919	19399,5	4,7%
Haute-Normandie	417	12317,4	3,4%
Centre	7033	39150,9	18,0%
Basse-Normandie	1362	17589,3	7,7%
Bourgogne	3948	31582	12,5%
Nord - Pas-de-Calais	334	12414,1	2,7%
Lorraine	1659	23547,4	7,0%
Alsace	1406	8280,2	17,0%
Franche-Comte	2510	16202,3	15,5%
Pays de la Loire	2666	32081,8	8,3%
Bretagne	966	27207,9	3,6%
Poitou-Charentes	3347	25809,5	13,0%
Aquitaine	4391	41308,4	10,6%
Midi-Pyrenees	3858	45347,9	8,5%
Limousin	1041	16942,3	6,1%
Rhone-Alpes	4735	43698,2	10,8%
Auvergne	3777	26012,9	14,5%
Languedoc-Roussillon	9213	27375,8	33,7%
Provence-Alpes-Cote d'Azur	9713	31399,6	30,9%
Corse	1344	8679,8	15,5%

Piemonte	3964	25402	15,6%
Valle d'Aosta	989	3263	30,3%
Liguria	1397	5422	25,8%
Lombardia	3717	23863	15,6%
Bolzano/Bozen	1497	7400	20,2%
Trento	1736	6207	28,0%
Veneto	4130	18399	22,4%
Friuli-Venezia Giulia	1468	7858	18,7%
Emilia-Romagna	2521	22117	11,4%
Toscana	3014	22994	13,1%
Umbria	1200	8456	14,2%
Marche	1457	9694	15,0%
Lazio	3980	17236	23,1%
Abruzzo	3871	10763	36,0%
Molise	1172	4438	26,4%
Campania	3733	13590	27,5%
Puglia	3992	19358	20,6%
Basilicata	1682	9995	16,8%
Calabria	2867	15081	19,0%
Sicilia	4486	25711	17,4%
Sardegna	4520	24090	18,8%
Norte	4467	21280	21,0%
Algarve	1824	4989,9	36,5%
Centro (P)	4232	28178,6	15,0%
Lisboa	489	2864,6	17,1%
Alentejo	7577	31483,6	24,1%
Açores	297	2322	12,8%
Madeira	257	828	31,1%

Qualifications – Work Force with Tertiary Education (2003 – 2008)

Unit: %

Source: Eurostat

Definition: Percentage of the employed population aged more than 15 with tertiary education - levels 5-6 (ISCED 1997)

	2003	2004	2005	2006	2007	2008
Galicia	22,8%	24,4%	28,0%	29,3%	30,2%	30,7%
Principado de Asturias	26,2%	28,9%	33,1%	31,0%	32,8%	34,1%
Cantabria	28,7%	28,2%	32,4%	33,2%	35,3%	35,5%
Pais Vasco	38,3%	39,8%	44,3%	44,9%	45,6%	45,0%
Navarra	36,3%	35,8%	38,4%	38,7%	39,7%	37,7%
La Rioja	28,1%	30,8%	30,0%	29,4%	31,4%	30,8%
Aragón	30,4%	31,2%	32,2%	34,0%	34,6%	32,8%
Comunidad de Madrid	35,2%	36,3%	36,4%	36,2%	38,9%	38,2%
Castilla y León	27,8%	28,0%	29,0%	30,1%	31,1%	31,5%
Castilla-la Mancha	19,5%	19,7%	21,5%	23,0%	23,8%	22,6%
Extremadura	19,8%	19,5%	21,0%	22,9%	23,6%	23,0%
Cataluña	27,4%	29,1%	30,9%	30,6%	30,0%	30,1%
Comunidad Valenciana	22,0%	24,5%	26,4%	26,7%	26,3%	26,2%
Illes Balears	18,5%	17,4%	20,3%	23,4%	21,5%	19,9%
Andalucia	21,2%	21,6%	23,4%	23,9%	24,5%	24,0%
Región de Murcia	22,3%	22,6%	23,6%	24,3%	24,2%	24,3%
Canarias (ES)	22,1%	23,0%	24,7%	23,5%	24,5%	23,1%
Île de France	35,1%	35,2%	37,9%	38,2%	38,4%	38,8%
Champagne-Ardenne	17,6%	18,8%	21,4%	23,3%	23,8%	22,9%
Picardie	16,5%	17,9%	20,5%	18,3%	18,1%	22,0%
Haute-Normandie	19,7%	18,8%	20,0%	20,9%	21,5%	20,0%
Centre	21,5%	21,4%	19,3%	21,6%	23,3%	23,7%
Basse-Normandie	16,9%	18,0%	22,5%	23,2%	24,3%	26,9%
Bourgogne	19,6%	20,3%	18,8%	19,4%	19,8%	22,5%
Nord - Pas-de-Calais	21,8%	21,2%	22,0%	23,1%	24,8%	25,9%
Lorraine	18,6%	18,4%	21,4%	21,9%	24,4%	22,7%
Alsace	25,0%	26,1%	26,6%	27,9%	26,5%	30,0%
Franche-Comté	20,7%	19,8%	19,7%	20,6%	22,0%	24,5%
Pays de la Loire	21,8%	23,6%	22,6%	23,5%	24,2%	24,3%
Bretagne	22,8%	23,4%	28,2%	27,4%	30,8%	29,4%
Poitou-Charentes	19,2%	20,8%	21,5%	23,6%	20,3%	21,8%
Aquitaine	22,2%	22,0%	23,4%	23,1%	24,3%	26,2%
Midi-Pyrénées	25,4%	26,5%	28,1%	32,8%	30,2%	31,8%
Limousin	19,3%	20,8%	23,1%	21,9%	23,0%	25,7%
Rhône-Alpes	24,6%	25,0%	25,3%	26,6%	29,1%	30,2%
Auvergne	21,6%	23,0%	22,1%	21,8%	23,8%	29,2%
Languedoc-Roussillon	26,2%	25,5%	24,4%	24,9%	26,7%	28,9%
Provence-Alpes-Côte d'Azur	24,9%	25,2%	24,2%	24,1%	24,9%	26,8%
Corse	16,0%	18,1%	14,6%	27,9%	20,7%	13,8%

Piemonte	10,8%	11,5%	12,2%	13,1%	14,4%	15,3%
Valle d'Aosta/Vallée d'Aoste	8,9%	11,2%	11,8%	12,6%	12,3%	12,8%
Liguria	13,7%	16,7%	16,2%	16,4%	17,4%	19,3%
Lombardia	12,7%	13,4%	14,0%	14,4%	15,4%	16,7%
Bolzano-Bozen	9,3%	10,0%	10,8%	10,2%	10,5%	10,7%
Trento	11,6%	11,3%	13,3%	14,5%	15,8%	16,0%
Veneto	10,1%	11,0%	12,2%	12,4%	13,2%	13,6%
Friuli-Venezia Giulia	11,9%	13,2%	13,8%	14,7%	14,4%	14,6%
Emilia-Romagna	13,3%	13,9%	14,0%	15,0%	15,6%	16,4%
Toscana	12,6%	13,0%	14,2%	15,3%	15,4%	16,2%
Umbria	12,8%	14,5%	14,2%	15,9%	15,4%	15,5%
Marche	11,7%	12,8%	14,2%	15,3%	14,6%	14,5%
Lazio	15,3%	17,3%	18,1%	18,3%	20,1%	21,1%
Abruzzo	11,8%	15,3%	15,0%	15,3%	14,6%	16,5%
Molise	11,5%	13,5%	13,8%	14,2%	15,1%	15,5%
Campania	11,0%	11,9%	13,0%	13,6%	13,6%	14,4%
Puglia	10,4%	10,1%	10,5%	12,0%	13,0%	14,0%
Basilicata	9,4%	9,8%	11,2%	12,4%	13,5%	14,0%
Calabria	10,7%	13,2%	13,2%	13,8%	15,4%	15,5%
Sicilia	11,2%	11,4%	12,1%	13,2%	13,8%	14,1%
Sardegna	10,0%	10,2%	10,0%	11,7%	12,1%	12,6%
Norte	8,1%	9,3%	9,7%	10,4%	10,6%	11,6%
Algarve	8,6%	12,4%	13,7%	12,0%	10,7%	11,6%
Centro (PT)	8,2%	9,5%	8,6%	9,7%	10,1%	10,1%
Lisboa	18,1%	20,8%	20,8%	20,8%	20,5%	21,4%
Alentejo	7,2%	8,9%	9,5%	8,8%	11,3%	13,6%
Açores (PT)	6,8%	7,1%	8,2%	8,7%	7,9%	7,6%
Madeira (PT)	7,7%	9,8%	10,5%	10,4%	11,6%	12,2%

Accommodation – Number of beds in hotels and similar establishments (2003 – 2008)

Unit: Units

Source: Eurostat

Definition: Bed places in an establishment are determined by the number of persons who can stay overnight in the beds set up in the establishment, ignoring any extra beds that may be set up by customer request. The term bed place applies to a single bed, double bed being counted as two bed places. The unit serves to measure the accommodation capacity of the establishment.

	2003	**2004**	**2005**	**2006**	**2007**	**2008**
Galicia	112216	115979	118605	119122	120063	122760
Asturias	61126	63667	64814	64812	67220	69723
Cantabria	63781	67369	68239	69039	69247	70426
Pais Vasco	34750	34585	35981	37021	38914	39539
Navarra	23624	24580	26115	26939	27342	29301
La Rioja	12902	13248	13577	13967	14198	14390
Aragón	72019	73237	75138	76761	81479	86850
Comunidad de Madrid	96788	103834	113935	117702	121067	125368
Castilla y León	270137	114973	119376	125516	129411	134463
Castilla-la Mancha	49186	50249	51101	55008	57552	59946
Extremadura	27644	28774	31378	33004	33225	35592
Cataluña	698116	714520	709692	710199	710054	706596
Comunidad Valenciana	276011	291808	302565	298945	306223	309964
Illes Balears	431933	432221	433151	435481	434257	431743
Andalucia	368040	401314	409735	399169	430303	447497
Región de Murcia	42534	43147	44527	45898	48044	48972
Canarias (ES)	386347	398035	443947	444490	426633	424220
Île de France	369461	373633	378929	381517	387267	396618
Champagne-Ardenne	47821	48839	50997	52298	54063	52007
Picardie	99956	99321	98641	100465	100439	109827
Haute-Normandie	63931	63385	64238	65366	66658	65610
Centre	134941	135978	134378	134532	134005	135776
Basse-Normandie	146906	153662	156844	156947	158465	159427
Bourgogne	91793	92965	95797	94570	95464	95667
Nord - Pas-de-Calais	182813	183593	183861	186624	185626	184948
Lorraine	97008	98142	99516	100192	103785	103392
Alsace	90939	92482	91037	92187	91835	91668
Franche-Comté	74561	75136	76052	74102	74102	73857
Pays de la Loire	401857	407100	413246	411199	410666	417695
Bretagne	429502	434158	441233	437774	434030	433927
Poitou-Charentes	278750	282044	298503	282073	282591	281033
Aquitaine	551273	563755	573128	563028	574601	580260
Midi-Pyrénées	266903	271710	271479	278815	277466	282404
Limousin	68221	66461	66832	66032	66052	66227
Rhône-Alpes	600788	622753	631286	620636	628161	637890
Auvergne	141714	143498	143029	141437	141665	138956
Languedoc-Roussillon	597632	597363	607358	601948	598061	597709
Provence-Alpes-Côte d'Azur	678453	686424	702989	691581	704536	701323
Corse	127976	131889	135535	133143	131913	130511

Piemonte	147019	151077	163626	170028	179766	182633
Valle d'Aosta	53280	50640	49838	50691	51161	53287
Liguria	150134	151302	153965	155540	157878	162831
Lombardia	262878	270589	282028	311378	318234	326246
Bolzano-Bozen	212804	214430	215741	217317	217912	220700
Trento	156902	156461	158457	157782	157644	160763
Veneto	642538	629639	678112	705000	632820	691765
Friuli-Venezia Giulia	153236	154205	153089	153870	153178	153965
Emilia-Romagna	404300	420139	421652	434958	431862	432459
Toscana	436545	441091	462045	475062	483463	505566
Umbria	69595	73480	76809	79886	82628	84795
Marche	211845	203890	225644	225535	226960	232329
Lazio	248577	250535	257508	268197	272223	288596
Abruzzo	98222	100804	102663	103417	103878	105202
Molise	12240	12662	12817	13268	13723	13399
Campania	171697	175873	178117	184346	188867	185755
Puglia	193892	204005	202417	207612	209701	222464
Basilicata	32376	32376	29807	36184	38075	38297
Calabria	193878	188272	189878	191183	194958	197634
Sicilia	146847	157356	165473	173621	181411	186793
Sardegna	159816	166751	170847	184796	189239	203571
Norte	59559	60642	65168	66413	70638	75024
Algarve	126573	127277	132465	131017	129870	132292
Centro (PT)	93123	94715	98396	99757	100311	101093
Lisboa	78425	83021	84127	87376	87886	89303
Alentejo	29327	29787	27038	30744	31449	31520
Açores (PT)	6350	7195	8605	8603	8563	8830
Madeira (PT)	29354	30523	30671	31233	29872	31040

Transport – Existence of airport (2003 – 2008)

Unit: Thousands

Source: Eurostat

Definition: The air transport regional data have been calculated using data collected at the airport level in the frame of Commission Regulation (EC) No 1358/2003.

Note: In the panel data model, a dummy variable has been used, assuming the value 0 for non-existence of airports and 1 for existence (even if there is more than one and independently of the number of passengers, since it is higher than 5.000 per year)

	2003	**2004**	**2005**	**2006**	**2007**	**2008**
Galicia	181254	203674	342767	465413	518574	525666
Asturias	25265	32657	97269	115410	116421	134695
Cantabria	1464	73953	312334	272810	311856	360331
Pais Vasco	875739	1162445	984316	1088114	1181672	1104618
Navarra	2077	2469	9454	15202	13952	13543
La Rioja						
Aragón	27843	41106	216802	254441	275293	329094
Comunidad de Madrid	17727730	19842998	21967126	24237388	28761545	29993941
Castilla y León	74228	278491	273586	274018	267004	266984
Castilla-la Mancha						
Extremadura						
Cataluña	13620585	16473029	18279118	20129787	23557784	24058032
Comunidad Valenciana	7478648	8069835	9193412	9273722	10215474	10929872
Illes Balears	18043322	18812597	18949519	19189080	20581382	20337938
Andalucia	10725939	11449887	12932377	13449547	14648459	14236645
Región de Murcia	492089	768535	1299801	1487164	1812211	1717158
Canarias (ES)	19792544	19015507	18348963	17991430	18082584	19151759
Île de France	50004623	54436723	57663139	61334063	65452584	66912657
Champagne-Ardenne						
Picardie	967467	1427253	1849304	1887737	2154482	2439693
Haute-Normandie	24509	20584	19362	21318	27443	24929
Centre	56490	73647	93972	77574	82474	88748
Basse-Normandie	32383	41827	49263	64827	83338	84825
Bourgogne	6715	5404	7117	8481	7434	7997
Nord - Pas-de-Calais	251421	276807	266220	331676	410775	385183
Lorraine	118604	127790	147983	129795	155626	137698
Alsace	1066095	903919	917269	723730	658733	549432
Franche-Comté						
Pays de la Loire	703547	766023	891925	1096087	1246678	1417708
Bretagne	217838	236193	347875	370745	418812	453627
Poitou-Charentes	198469	299900	396290	525468	557754	555136
Aquitaine	998143	1243517	1424102	1632398	1793323	1907385
Midi-Pyrénées	2072079	2369239	2490680	2523470	2671882	2974261
Limousin						
Rhône-Alpes	3634483	3942919	4371107	4560748	5008469	5530575
Auvergne	168553	80556	72183	65128	59283	59820
Languedoc-Roussillon	789942	868697	992774	1128861	1109135	1120029
Provence-Alpes-Côte d'Azur	6953626	7626543	7993020	8459294	9626736	9659648
Corse	174505	173562	182284	201641	198145	224398

Piemonte	1170097	1361657	1390906	1526094	1714006	1451188
Valle d'Aosta						
Liguria	392369	395244	359092	378720	365883	452413
Lombardia	18755267	20484294	22627076	25330206	27548745	24056297
Bolzano-Bozen	2007	9341	14771	9997	10476	8121
Trento						
Veneto	5477919	6399421	6880444	7400660	8509407	8708095
Friuli-Venezia Giulia	228264	263935	253881	278819	274401	338569
Emilia-Romagna	2822195	2742686	3108445	3440899	3945751	3953067
Toscana	2027867	2496249	2936542	3372255	4125363	4376235
Umbria						
Marche	278326	296936	272334	275328	303000	265851
Lazio	14455970	17964740	20514512	22123244	24598764	26171840
Abruzzo		180871	233385	227468	253371	286540
Molise						
Campania	1800687	2047033	2041027	2313775	2571341	2600130
Puglia	258713	506106	519912	569703	669932	801772
Basilicata						
Calabria		57522	229887	359085	339587	330840
Sicilia	1400662	1633976	1754198	1973007	2412938	2389570
Sardegna	381877	937726	1164565	1267436	1580326	1658126
Norte	1861668	1962283	2249555	2619758	3201189	3773527
Algarve	4480359	4387981	4544371	4869332	5344267	5223760
Centro (PT)						
Lisboa	7454328	8330576	8899318	10008371	11458586	11521816
Alentejo						
Açores (PT)	162615	179358	262357	253246	281392	263711
Madeira (PT)	1121371	1094282	1232377	1294030	1371132	1387466

Markets– GDP per habitant (2003 – 2008)

Unit: Euros

Source: Eurostat

Definition: GDP per habitant (current prices)

	2003	2004	2005	2006	2007	2008
EU (15)	25000	26000	26800	28000	29200	29100
Spain	18600	19700	20900	22300	23500	23900
France	25700	26600	27400	28500	29700	30400
Italy	23200	23900	24400	25200	26000	26200
Portugal	13300	13700	14100	14700	15400	15700

Rival Markets– Nights in Hotels and similar establishments (2003 – 2008)

Unit: Thousands

Source: Eurostat (for Greece, Cyprus and Croatia) and General Directorate of Investment and Enterprises, Ministry of Culture and Tourism, Republic of Turkey (for Turkey).

	2003	2004	2005	2006	2007	2008
Greece	53476	51590	54017	56708	64086	64074
Cyprus	14381	14623	14939	14341	14298	14310
Croatia	19668	19972	21277	20693	20940	20551
Turkey	57099	68084	74927	68143	68143	78788
SE Europe	**144624**	**154269**	**165160**	**159885**	**167467**	**177723**

Investment– Gross fixed capital formation in hotels and restaurants (2003 – 2008)

Unit: Euros

Source: Instituto Nacional de Estatística (Portugal); Instituto Nacional de Estadística (Spain); Institut National de la Statistique et des Études Économiques (France); Istituto Nazionale di Statistica (Italy)

Definition: Gross fixed capital formation in hotels and restaurants at current prices

Notes: The period taken in consideration for this variable in the panel data model is different from all the other variables (1 year less), assuming that the impacts of investment in the period t will have impacts on tourism demand in the year t+1 (as it was confirmed by the results of the model).

The values for Italy in 2007 were estimated taking in consideration the average growth rate in the previous years, due to the absence of data.

	2002	**2003**	**2004**	**2005**	**2006**	**2007**
Galicia	97751	83316	111750	101884	110320	155393
Asturias	46026	37264	34178	49809	79881	87395
Cantabria	13597	12052	18300	31322	49594	25507
Pais Vasco	51856	47884	51811	60116	87458	65706
Navarra	26257	25456	24236	37414	32484	37523
La Rioja	11227	12871	10550	8105	20460	18511
Aragón	53860	68084	103388	151346	99169	97538
Comunidad de Madrid	498315	467854	491694	640579	869668	747198
Castilla y León	112356	96289	128957	129418	108142	145934
Castilla-la Mancha	76517	81188	61742	50406	154265	103242
Extremadura	19327	23789	51772	30371	35958	28793
Cataluña	708115	820500	788381	617912	742767	709181
Comunidad Valenciana	362716	360569	324192	412830	490606	425796
Illes Balears	480412	487680	623580	467627	457909	562660
Andalucia	429709	376956	445904	478764	358316	526681
Región de Murcia	39552	42332	86856	70783	129922	68609
Canarias (ES)	499012	521675	427319	463790	390204	497449
Île de France	1514467	1493776	1349669	1342914	1929681	1631975
Champagne-Ardenne	64818	63284	82003	85114	74349	76726
Picardie	89999	94457	93132	99977	114299	138960
Haute-Normandie	96931	105468	106118	120876	147698	142866
Centre	133406	138062	157343	164908	208764	199577
Basse-Normandie	120682	132238	141564	142565	180071	163228
Bourgogne	95029	90046	128078	108894	141098	129330
Nord - Pas-de-Calais	204809	205659	211777	199381	222574	234673
Lorraine	111766	116024	109034	120474	133866	146259
Alsace	116210	108633	112600	118933	131520	143931
Franche-Comté	57546	56742	65124	58278	78756	66858
Pays de la Loire	258408	279191	300794	293250	342369	352240
Bretagne	312579	297411	336454	355537	402288	382048
Poitou-Charentes	125134	119280	137160	161865	179630	182582
Aquitaine	217073	233113	273792	279933	318653	357299
Midi-Pyrénées	156671	192826	189999	201918	230547	224309
Limousin	30931	35840	37314	44187	43506	50866
Rhône-Alpes	650114	605730	679800	848041	956052	977003
Auvergne	80843	79074	82728	87621	106135	99942
Languedoc-Roussillon	224651	256033	261012	289753	342637	340887
Prov-Alpes-Côte d'Azur	603288	582087	672860	623716	703770	789134
Corse	70003	69030	85394	66730	82894	98351

Piemonte	103039	171288	148047	83208	94433	*92397*
Valle d'Aosta	26991	31094	27854	32090	16540	*14634*
Liguria	101716	55413	122404	49261	38453	*30151*
Lombardia	366599	962951	491536	345034	463590	*491609*
Bolzano-Bozen	214907	1276760	142978	365259	772163	*1063099*
Trento	150798	498108	257720	166657	167410	*171842*
Veneto	462516	192103	334112	850524	976038	*1176391*
Friuli-Venezia Giulia	279818	224227	60818	36456	120083	*97193*
Emilia-Romagna	224091	265684	201215	415040	344714	*383899*
Toscana	222620	371725	170322	302219	740251	*999615*
Umbria	119572	28071	19082	90569	155297	*165786*
Marche	79645	38249	79965	173362	217026	*278836*
Lazio	245608	322978	160525	605300	365683	*403943*
Abruzzo	126152	41206	83828	117295	102409	*97207*
Molise	8963	5726	18581	4433	15236	*17396*
Campania	70413	182178	219888	152162	86211	*90686*
Puglia	419964	156792	176189	352934	154884	*120699*
Basilicata	41588	83750	75922	50289	19425	*16059*
Calabria	156122	170690	124732	32181	303027	*357673*
Sicilia	105807	165193	123193	161603	418353	*589929*
Sardegna	158054	112993	51498	96761	290299	*337952*
Norte	85226	97305	77360	329515	208453	251664
Algarve	75457	206640	82206	306544	231240	256713
Centro (PT)	96048	94597	107181	288083	182740	203330
Lisboa	191638	161168	202526	347884	408573	429286
Alentejo	74570	38689	21956	110123	61265	65087
Açores (PT)	17075	23742	21984	51584	35765	48655
Madeira (PT)	63673	31224	29610	132335	127854	139590

Dummy variable: Position in Tourism Area Life Cycle

Source: Eurostat

Notes: The location quotients were calculated for 2006 (the most recent data available), dividing the weight of employment in hotels and restaurants in the total regional employment by the weight of employment in hotels and restaurants in all the regions in the overall employment.

The growth rates of nights spent in hotels and restaurants were calculated for the period 2002 – 2008.

The regional position in the TALC model was calculated in two steps:

- regions with growth rates of nights in hotels above 2,5% were considered in the "Development" stage (2);
- for the other regions, if the location quotient (LQ) was above 1 (high specialization), they were classified in the "Stagnation" stage (3); if LQ was below 1 (low specialization), they were considered in the "Exploration" stage (1).

	LQ 2006	**Nights av gr 2002-2008**	**TALC**
Galicia	1,08	3,7%	2
Asturias	1,32	3,5%	2
Cantabria	1,30	1,8%	3
Pais Vasco	1,09	4,7%	2
Navarra	1,01	4,1%	2
La Rioja	1,03	4,3%	2
Aragón	1,04	5,4%	2
Comunidad de Madrid	1,53	6,6%	2
Castilla y León	1,12	4,9%	2
Castilla-la Mancha	0,88	5,3%	2
Extremadura	0,83	5,1%	2
Cataluña	1,34	1,9%	3
Comunidad Valenciana	1,14	2,0%	3
Illes Balears	3,59	0,1%	3
Andalucia	1,13	3,1%	2
Región de Murcia	0,94	0,2%	1
Canarias (ES)	2,19	0,3%	3
Île de France	1,00	3,1%	2
Champagne-Ardenne	0,50	1,8%	1
Picardie	0,46	1,5%	1
Haute-Normandie	0,51	-0,4%	1
Centre	0,53	0,2%	1
Basse-Normandie	0,68	0,6%	1
Bourgogne	0,61	1,5%	1
Nord - Pas-de-Calais	0,50	0,4%	1
Lorraine	0,48	-0,7%	1
Alsace	0,68	-0,7%	1
Franche-Comté	0,45	-1,7%	1
Pays de la Loire	0,55	0,9%	1
Bretagne	0,69	-1,4%	1
Poitou-Charentes	0,58	0,1%	1
Aquitaine	0,69	2,0%	1
Midi-Pyrénées	0,60	1,1%	1
Limousin	0,52	-0,3%	1
Rhône-Alpes	0,85	-0,3%	1
Languedoc-Roussillon	0,85	0,6%	1

Provence-Alpes-Côte d'Azur	1,06	0,7%	3
Corse	1,89	-0,5%	3
Piemonte	0,84	5,3%	2
Valle d'Aosta	2,59	-2,3%	3
Liguria	1,43	-0,9%	3
Lombardia	0,90	1,7%	1
Bolzano-Bozen	3,26	1,5%	3
Trento	2,24	1,4%	3
Auvergne	0,58	-1,8%	1
Veneto	1,19	1,9%	3
Friuli-Venezia Giulia	1,09	0,0%	3
Emilia-Romagna	1,26	0,9%	3
Toscana	1,26	2,3%	3
Umbria	0,99	0,7%	1
Marche	1,01	-3,1%	3
Lazio	1,08	5,7%	2
Abruzzo	1,00	1,2%	3
Molise	0,80	-3,0%	1
Campania	0,75	-1,0%	1
Puglia	0,71	2,6%	2
Basilicata	0,79	1,1%	1
Calabria	0,72	3,0%	2
Sicilia	0,69	1,2%	1
Sardegna	1,05	3,4%	2
Norte	0,76	3,5%	2
Algarve	3,52	0,1%	3
Centro (PT)	0,75	4,4%	2
Lisboa	1,51	6,4%	2
Alentejo	0,98	1,9%	1
Açores (PT)	1,09	6,6%	2
Madeira (PT)	2,57	2,0%	3